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ABSTRACT

Many feel that scientists and engineers play a critical role in expanding the frontiers and knowledge of science and engineering and in educating and training future generations of scientists and engineers. They may do so by providing leadership in areas of national interest including efforts to increase the international competitiveness and strengthen the defense of the United States. The doctoral science and engineering work force has experienced major changes over the period from 1975-1985. The changes have included increases in the number employed, a relative shift to industrial employment, a relative decline in the importance of teaching and a sharp increase in the number of women with doctorates. This report analyzes the major changes that have taken place over the 1975-85 decade among doctoral scientists and engineers and provides a set of trend data pertaining to this population. Discussions include: (1) "Employment of Doctoral Scientists and Engineers"; (2) "Character of Science and Technology"; (3) "Age Profiles"; (4) "Salaries"; and (5) "Women and Minorities." Appendices include technical notes, detailed statistical tables, and a reproduction of the 1985 survey questionnaire. (CW)

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foreword

Scientists and engineers with doctorates play a critical role in expanding the frontiers and knowledge of science and engineering and in educating and training future generations of scientists and engineers. They do so by providing leadership in areas of critical national interest; these include efforts to increase our international competitiveness and strengthen our national defense.

The doctoral science and engineering (S/E) work force has experienced major changes over the 1975-85 decade. In addition to increases in the number employed, these changes include a relative shift to industrial employment, a relative decline in the importance of teaching, and a sharp increase in the number of women with doctorates.

This report has two main objectives: (1) to analyze the major changes that have taken place over the 1975-85 decade among doctoral scientists and engineers, and (2) to provide a relatively comprehensive set of trend data pertaining to this population.

William L. Stewart
Director, Division of
Science Resources Studies
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Techological, and International Affairs

March 1988

acknowledgments

This report was developed within the Division of Science Resources Studies, Surveys and Analysis Section, by Melissa J. Lane, Economist, Scientific and Technical Personnel Characteristics Studies Group (STPCSG); under the direction of Michael F. Crowley, Study Director, STPCSG. John A. Scopino, Senior Science Resources Analyst within the Study Group, contributed to the analysis, prepared the Technical Notes, and assisted in several other aspects of the study.

Guidance and review were provided by Charles H. Dickens, Head, Surveys and Analysis Section; and William L. Stewart, Director, Division of Science Resources Studies.

general note

Because of changes in definitions and in other aspects of survey conduct and operations, data published in this report for any year are not strictly comparable with estimates published in earlier years. Caution should therefore be exercised in using published data to develop historical trends. The data in this report have, however, been adjusted to minimize these differences and are suitable for use in analyzing historical trends.

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executive summary

Employment of doctoral scientists and engineers increased from 256,100 in 1975 to 400,000 in 1985; this change represents an annual growth of 4.6 percent. Over roughly the same period, employment of scientists and engineers at all degree levels rose at an annual rate of 7 percent; in comparison, overall U.S. employment increased at an annual rate of 2 percent. Among Ph.D. scientists, employment of computer specialists increased more than three times faster than for all doctoral-level scientists (15.5 percent per year versus 4.6 percent). For doctoral engineers, employment increased at an annual rate of 4.5 percent. Annual growth rates among engineering disciplines ranged from 6.6 percent for aeronautical engineers to 2.9 percent for chemical engineers.

In 1985, 95 percent of Ph.D. scientists and 80 percent of engineers were employed in a field coincident with their field of degree. These proportions have remained relatively constant since 1975. Computer specialists are, however, a notable exception to this generally high rate of coincidence between employment and degree fields. For example, in 1985, only about 18 percent of those employed as computer specialists had earned their doctorate in computer science. Another 17 percent held their degree in mathematics while 11 percent had physics degrees.

Over the 1975-85 decade, doctoral employment increases varied substantially by sector. In the industrial sector, employment rose at an annual rate of 6.9 percent, compared to 3.6 percent in educational institutions. Underlying these different growth rates, has been a pronounced shift in relative employment from academia to industry over the 10-year period. In 1985, 53 percent were in academia, down from 58 percent ten years earlier. In industry, the proportion rose from 25 percent in 1975 to 31 percent in 1985.

The distribution of work activities of doctoral scientists and engineers changed over the decade. The shifts in reported work activities reflect changes both in employment sector and the activity patterns within these various sectors. In general, the proportion of doctorates citing research and development as their major activity remained constant, while the proportion citing teaching and management declined. Activities showing increased relative importance include sales, professional services, and production and related activities (e.g., operations and quality control).

Sectoral mobility patterns of doctoral scientists and engineers have been mixed over the 1975-85 period. While generally, there has been little movement into or out of academia, there have been substantial movements between government and industry. Inflows to industry have exceeded the sector's outflows.

The average age of those in the doctoral science and engineering (S/E) work force has increased over the 1975-85 decade. In 1975, 25 percent were under age 35 and only 14 percent were 55 or older. By 1985, however, 14 percent were under 35, and 19 percent were 55 or older. Those in academia are, on average, older than their colleagues in industry.

Younger doctoral scientists and engineers are much more likely than their senior colleagues to work in research and development, especially basic research. Among those doctorates who report research and development as their major activity, 23 percent were under 35; among

those specifically reporting basic research, 27 percent were 35 or younger. Doctorates reporting teaching as their major activity showed age profiles substantially different from those in research and development: in 1985, only 9 percent were under 35 while 24 percent were 55 or older.

The median annual salary of Ph.D. scientists and engineers rose faster than the average weekly earnings in nonagricultural industries over the decade. It did not, however, increase as quickly as the Consumer Price Index (CPI). Salaries of doctoral scientists and engineers rose 93 percent ($23,200 to $44,800 between 1975 and 1985); in contrast, average weekly earnings in nonagricultural industries rose 83 percent, while the CPI increased about 100 percent. Engineers, on average, reported salaries about $10,000 per year above those for scientists ($52,400 versus $42,500). S/E doctorates employed in industry averaged the highest annual salaries: in 1985, industry sector salaries were $12,000 per year above those in academia ($52,000 versus $40,000).

The number of employed women holding S/E doctorates more than doubled between 1975 and 1985, rising from 22,000 to more than 58,000. This increase represents an annual growth rate of more than 10 percent; the comparable annual increase for men was about 4 percent. This growth rate primarily reflects the faster rates of degree production for women as well as the relatively small number of women in this population. Despite more rapid growth, women accounted for only 15 percent of all employed doctoral scientists and engineers in 1985; this fraction was, however, up from about 9 percent in 1975. Among fields, the representation of women varies from 2 percent of engineers to 32 percent of psychologists.

The number of employed doctoral scientists and engineers who were members of racial minority groups rose from 16,500 in 1975 to 41,000 in 1985. Almost all (85 percent) of this increase is attributed to Asians, whose numbers rose from 14,000 to 35,000. In 1985, Asians accounted for 8.6 percent of all employed doctoral scientists and engineers, up from 5.3 percent in 1975. During the same period, the number of black doctoral scientists and engineers rose from 2,500 (or 1.0 percent of all employed S/E doctorates) to 5,700 (1.4 percent). The number of native Americans rose from about 200 to 500 between 1975 and 1985.

There were about 5,900 Hispanic[1] doctoral scientists and engineers employed in the United States in 1985, up from 2,000 10 years earlier. In 1985, Hispanics accounted for 1.5 percent of total doctoral S/E employment, as compared to 0.8 percent in 1975.

[1]Includes members of all racial groups.

section i

employment of doctoral scientists and engineers

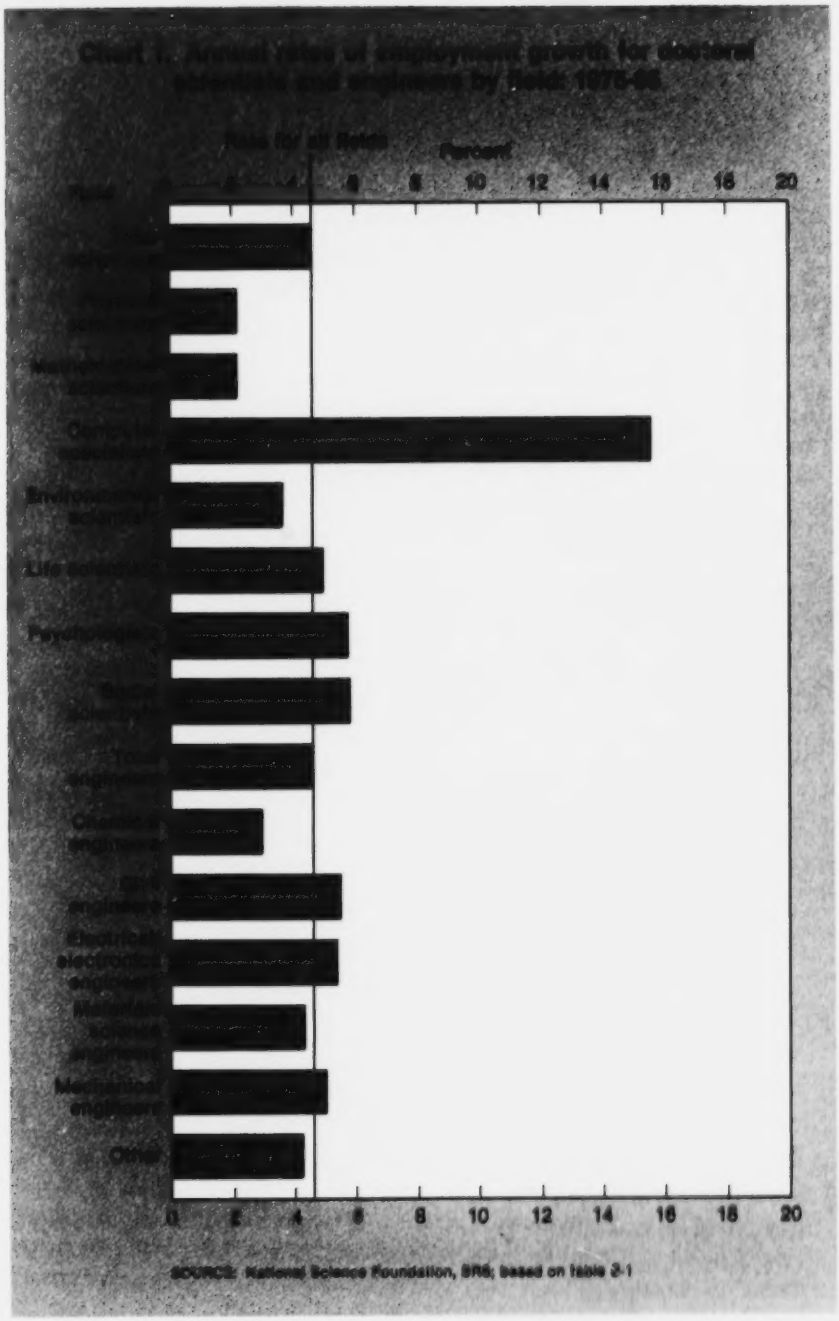
levels and trends

Employment of doctoral scientists and engineers rose from 256,000 in 1975 to 400,000 in 1985, an increase of 56 percent or 4.6 percent per year. Over roughly the same period, employment of scientists and engineers at all degree levels increased at an annual rate of 7 percent, while overall U.S. employment grew at an annual rate of 2 percent.[2]

[2]Growth in overall U.S. employment is based on data from Council of Economic Advisors, *Economic Report of the President* (Washington, D.C.: Supt. of Documents, U.S. Government Printing Office), January 1987.

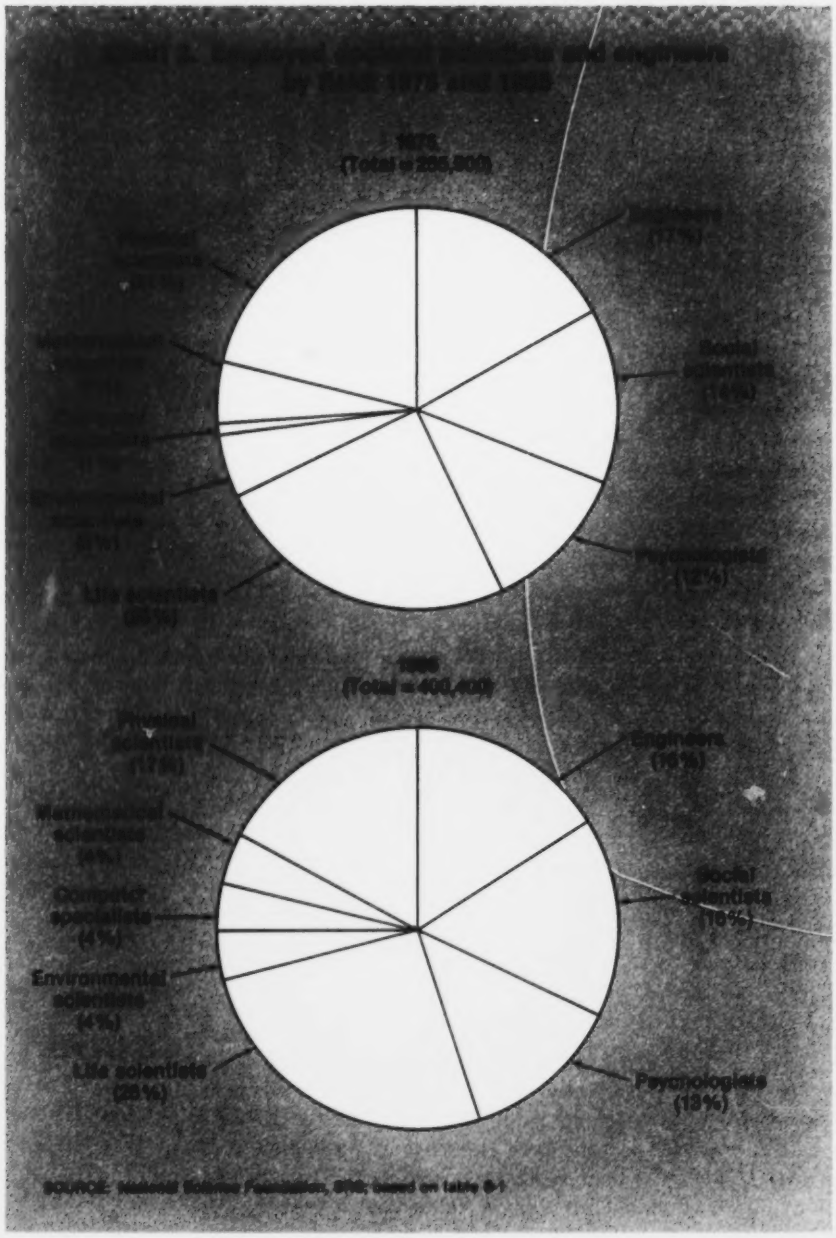
In absolute terms, the employment increase between 1975 and 1980 was about the same as that between 1980 and 1985. This relatively even distribution in absolute growth resulted from a relatively constant yearly output of new S/E doctorates from U.S. colleges and universities. New doctorates from U.S. universities represent the major source of additions to the Ph.D. S/E work force. Over the 1974-84 decade, the number of Ph.D.s awarded in science and engineering was between 17,000 and 18,000 each year. Annual losses in the doctoral S/E work force caused by death and retirement averaged only about 1 percent. In 1985, only about 16,000 doctoral scientists and engineers were retired.

In 1985, scientists at the doctoral level outnumbered engineers by about five to one. This ratio has been essentially unchanged since 1975. Within both science and engineering, however, employment growth rates varied considerably by field (chart 1). Among scientists, employment of computer specialists rose at the highest annual rate (16 percent); this rate was more than three times the rate for all scientists (5 percent). Growth among the various engineering fields varied within a narrower range over the 1975-85 decade. Overall employment of doctoral en-



gineers increased at an annual rate of 5 percent, by field, however, growth ranged from 7 percent per year for aeronautical/astronautical engineers to 3 percent for chemical engineers.

Differences in growth rates altered the field distributions of the science doctoral work force over the 1975-85 decade (chart 2). Most notably, the proportion who were employed as physical and mathematical scientists declined, while the proportions employed as computer specialists, psychologists, and social scientists increased. In contrast, there were only relatively modest shifts among engineering fields.



field mobility

Degree field versus employment field. If a large proportion of those employed in a field also hold their doctorate in that field, it may be an indication that entry is rigid and often dependent upon field of degree. Conversely, a low proportion indicates flexible entry and a much more eclectic educational mix.

Across most S/E fields at the doctoral level, a substantial proportion of those employed in a field also hold their degree in that field (table 1). For example, in 1985, more than 90 percent of doctorate-holders employed as chemists also held doctorates in this field. In five fields, however, less than one-half of those employed held coincident degrees: statistics (46 percent), medical sciences (46 percent), aeronautical/astronautical engineering (44 percent), systems design engineering (19 percent), and computer specialties (18 percent). The educational backgrounds of those employed in these fields varied substantially. For example, among the 15,000 doctorate-holders employed as computer specialists in 1985, 17 percent held doctorates in mathematics, 11 percent had Ph.D.s in physics, and 7 percent held psychology doctorates. Perhaps reflecting the limited skill transferability from field of training to other S/E fields, field coincidence patterns for the doctoral S/E work

Table 1. Proportion of doctorates whose field of degree is the same as their field of employment: 1985

Field	Percent
Total science	95
Physical sciences	92
Chemistry	92
Physics	88
Mathematical sciences	87
Mathematics	86
Statistics	46
Computer science	18
Environmental sciences	66
Earth sciences	63
Oceanography	57
Atmospheric sciences	54
Life sciences	88
Biological sciences	82
Agricultural sciences	77
Medical sciences	46
Psychology	94
Social sciences	92
Economics	95
Sociology	95
Other social sciences	77
Total engineering	80
Aeronautical/astronautical	44
Chemical	88
Civil	84
Electrical/electronics	64
Materials science	60
Mechanical	66
Nuclear	58
Systems design	19
Other engineering	38

SOURCE: National Science Foundation, SRS, based on table B-27

force have remained relatively constant since 1975. Field coincidence, however, is affected by a number of factors. These factors include (a) narrowness of field definition, (b) extent to which new knowledge is readily classified in existing fields, (c) the responsiveness of Ph.D. programs to new fields or specialties, and (d) changes in supply/demand conditions.

Changes in employment field. Mobility among fields most often results from changing supply and utilization balances. The doctoral S/E work force is not as sensitive to such supply/demand changes as are other populations (e.g., the overall S/E work force or all professional and related occupations) partially because of the substantial commitments of resources, time, and mental and emotional energy required to pursue in-depth study of a particular field. Field mobility among doctoral scientists and engineers thus is limited. The mobility that does occur is most often among fields where related skills and training are required, e.g., chemical engineering and chemistry. Field mobility may be explored from two perspectives. The first is the propensity for doctorate-holders employed in a particular field to remain in that field.

A majority of those doctoral scientists and engineers employed in both 1975 and 1985 were working in the same field during the two periods. The highest propensity to remain in the same field occurred in psychology and economics. Among those working in 1975, 94 percent of doctoral psychologists and 92 percent of doctoral economists continued to be employed in those fields in 1985. Among other fields, proportions ranged from 54 percent of Ph.D. atmospheric scientists to 89 percent of Ph.D. sociologists. Only in systems design engineering did a relatively low fraction (28 percent) remain in the field over the 10-year period. Those who had been employed in this field in 1975 had moved into such fields as computer specialties, electrical engineering, aeronautical engineering, mathematics, and physics by 1985.

Field mobility can also be assessed by determining that fraction of current employment in a particular field accounted for by those who were employed in that field in an earlier period. Fields in which a relatively lower fraction of current employment is accounted for by those who have not changed fields may indicate a demand for that field which outpaces the supply.

Among all science fields (except computer specialties), more than three-fifths of employment in 1985 is made up by those who were in these fields in 1975. However, only 35 percent of doctoral computer specialists working in the field in 1985 were also in this field 10 years earlier. The background of the remaining doctoral personnel employed as computer specialists varied considerably: about 14 percent had been mathematicians, 8 percent were physicists, 6 percent had been systems design engineers, and 4 percent worked as electrical/electronics engineers.

The pattern also varied among engineering fields. More than 78 percent of civil engineers employed in 1985 were also working in this field in 1975; for aeronautical/astronautical engineers, however, only 51 percent had been in the field 10 years before. The lowest fraction again occurred in systems design engineering. In 1985, only about 25 percent of employment in this field was accounted for by those in the same field in 1975. The remainder had been in fields such as mathematics and electrical engineering in 1975.

labor market conditions

Labor market conditions for doctoral scientists and engineers remained generally favorable over the 1975-85 decade and seemed little influenced by changes in economic conditions. Unemployment rates, for example, remained low over the 10-year period. In 1985, the unemployment rate for doctoral level scientists and engineers was nominal at 0.8 percent (1.0 percent in 1975). By comparison, for the overall U.S. work force, unemployment ranged from a high of 9.7 percent in 1982 to a low of 5.8 percent in 1979; in 1985, it was 7.2 percent.[3] For scientists and engineers at all educational levels, the

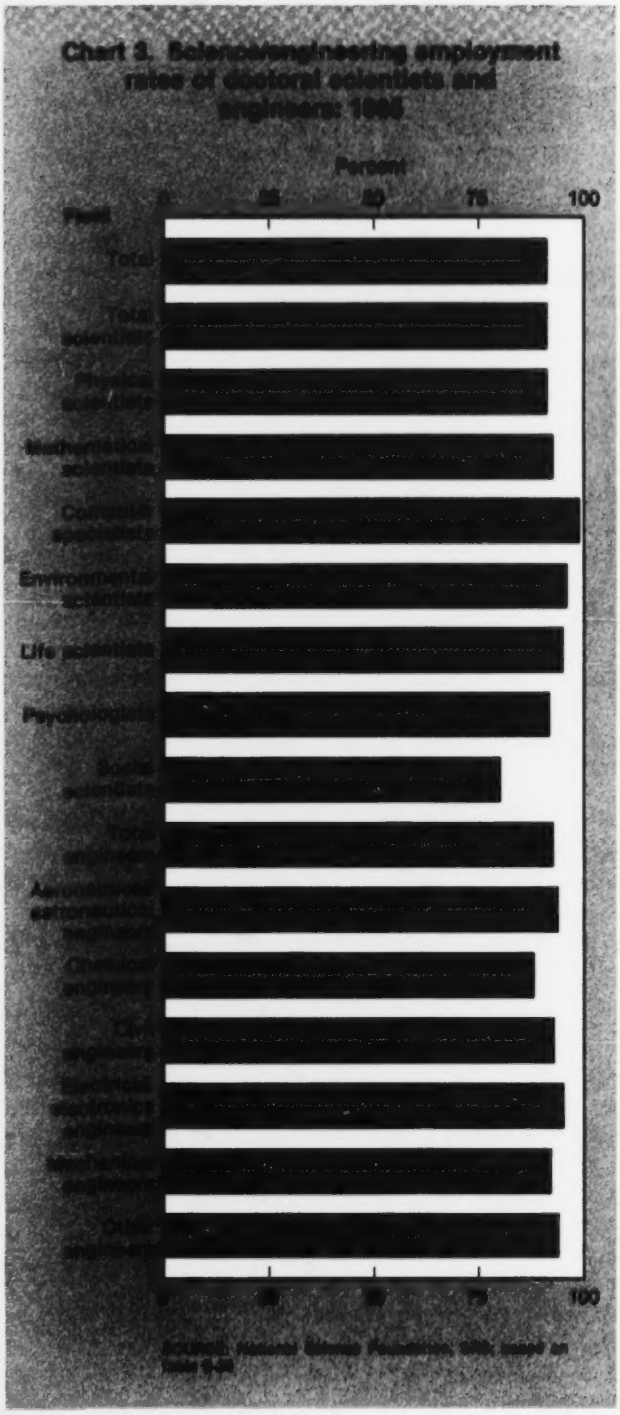
[3] *Economic Report of the President*, op. cit., p. 280.

unemployment rate declined from 3.4 percent in 1976 to 1.6 percent in 1986.

Unemployment rates varied by field; the overall rate for engineers (0.5 percent) was below that for scientists (0.9 percent). Among doctoral engineers, the unemployment rate ranged from virtually nil for mechanical and nuclear engineers to 1.8 percent for chemical engineers. Among scientists, the rates varied from virtually zero for computer specialists to 2.1 percent for sociologists and anthropologists.

Another indicator of the favorable conditions faced by the doctoral S/E work force is the S/E employment rate. The S/E employment rate measures the extent to which employed scientists and engineers have a job in science or engineering. Depending on the specific reasons for non-S/E employment, a low rate could be an indicator of underutilization. Factors relating to non-S/E employment include lack of available S/E jobs, higher pay for non-S/E employment, location, or preference for a job outside of science or engineering.

In 1985, the S/E employment rate for doctoral scientists and engineers was 91 percent; this rate was only slightly lower than the 94-percent rate recorded in 1975. Over the 10-year period the S/E employment rate fell somewhat for all fields, except chemistry and computer specialties where they were essentially unchanged. S/E employment rates varied by field (chart 3), with the rate for engineers (93 percent) above that for scientists (91 percent) in 1985. Among engineers, the lowest rate was recorded for chemical engineers (88 percent); the lowest rate for scientists was recorded for social scientists (80 percent).



section ii

character of science and technology

Research and development and teaching are the major activities of doctoral scientists and engineers. The number, proportion, and distribution of those engaged in these activities varies considerably by employment sector. Sectoral employment patterns of Ph.D. scientists and engineers, and the distribution of work activities within these sectors, are indicators of the character of the U.S. science and technology enterprise, i.e, research and development, management, and production and related activities. This section examines the changes that have occurred over the decade in terms of overall sectoral employment and work activity patterns; it then focuses specifically on the changes that have taken place within the two largest employment sectors of doctoral scientists and engineers: industry and academia.

sector

Employment increases for doctoral scientists and engineers over the 1975-85 decade varied by sector with industry growing more rapidly than academia. In the industrial sector, employment of Ph.D. scientists and engineers increased at an annual rate of 6.9 percent, compared to 3.6 percent in academia, and 4.6 percent in all sectors combined (table 2). Industry growth reflects both a relative lack of opportunity in academia in some fields (e.g., social science) and strong industrial demand for other fields (e.g., computer science and engineering). Other factors contributing to the greater demand in industry include increased R&D funding, relatively strong growth in those industries (especially high technology ones) that employ large numbers of scientists and engineers, and changes in occupational staffing patterns.

Table 2. Employment growth rates of doctoral scientists and engineers by sector of employment: 1975-85

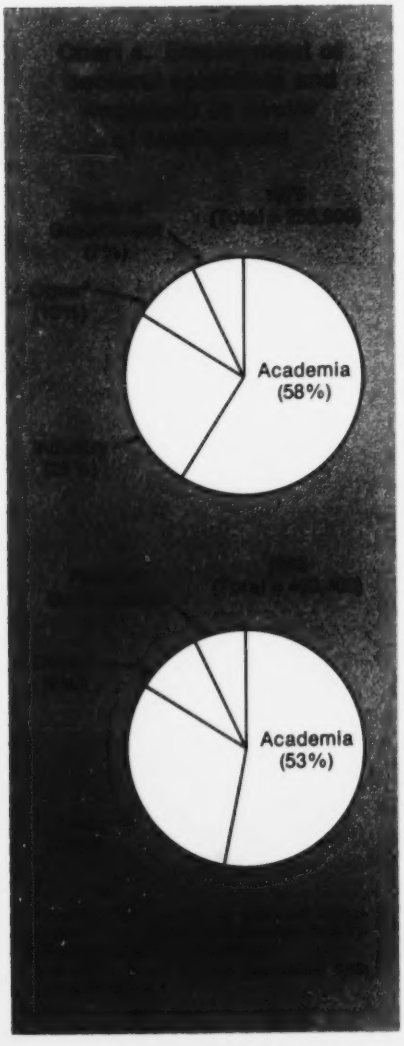
Sector of employment	Annual growth rate	Employment change
Total	4.6%	144,400
Industry	6.9%	61,100
Academia	3.6%	62,500
Federal Government	3.3%	62,500
Other[1]	4.7%	13,400

[1]Includes hospitals/clinics, nonprofit organizations, State/local governments, and all other employers.

SOURCE: National Science Foundation, SRS; based on table B-4

There has been a pronounced shift from academia to industry in relative employment levels over the 1975-85 decade. The proportion of all doctoral scientists and engineers employed in industry rose from 25 percent in 1975 to 31 percent in 1985. Over the same period, the proportion employed in academia declined from 58 percent to 53 percent (chart 4).

The relative importance of each sector in providing employment opportunities for doctoral scientists and engineers is very field specific. Educational institutions employed about one-half of all Ph.D. scientists and engineers in 1985; by major field, however, proportions ranged from 80 percent of mathematical scientists to 33 percent of engineers. Industry, with about one-third of all employed doctoral scientists and engineers in 1985, employed almost 60 percent of engineers but only 11 percent of mathematical scientists. Within major fields, the differences in relative employment are even more striking. These differences are discussed in more detail in the sections entitled "The Industrial Perspective" and "The Academic Perspective."

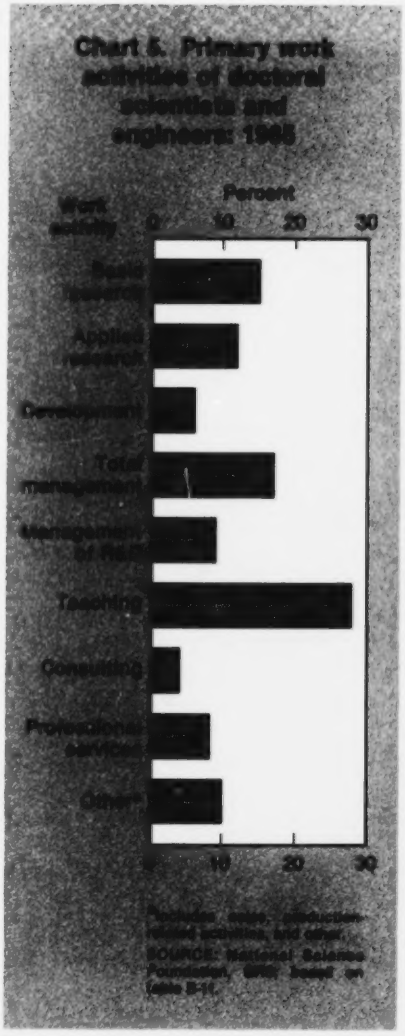


work activities

Work activities of doctoral scientists and engineers have shifted considerably since 1975. While the proportion citing research and development as their major activity has remained relatively constant, those citing teaching and management have declined. Consulting, sales, professional services, and production and related activities all increased in relative importance over the decade. Nonetheless, research and development (33 percent) and teaching (28 percent) continued to be the major work activities of Ph.D. scientists and engineers (chart 5).

The number of doctoral scientists and engineers citing research and development as their primary activity increased from 82,000 in 1975 to 133,000 in 1985, representing an increase of 5 percent per year. Almost 112,000 were primarily engaged in teaching in 1985, up from 91,000 since 1975. This increase, however, represents a growth rate of only 2 percent per year, considerably below the increase of about 5 percent per year noted for all employed Ph.D. scientists and engineers.

The largest relative increases were registered by those involved in sales, professional services, and production and related activities, such as quality control. Although rapidly growing, these activities employ relatively fewer doctoral scientists and engineers. For example, the number reporting their major area as production and related work increased at an annual rate of more than 16 percent between 1975 and 1985. In 1985, however, only about 2 percent (8,500) reported this type of work as their primary activity.



Changes in reported work activities for doctoral scientists and engineers reflect both sectoral shifts in employment and shifts in activity patterns within the various sectors. To gain a better understanding of the relationship of inter- and intrasectoral shifts, the following section discusses the two major employment sectors of doctoral scientists and engineers.

the industrial perspective

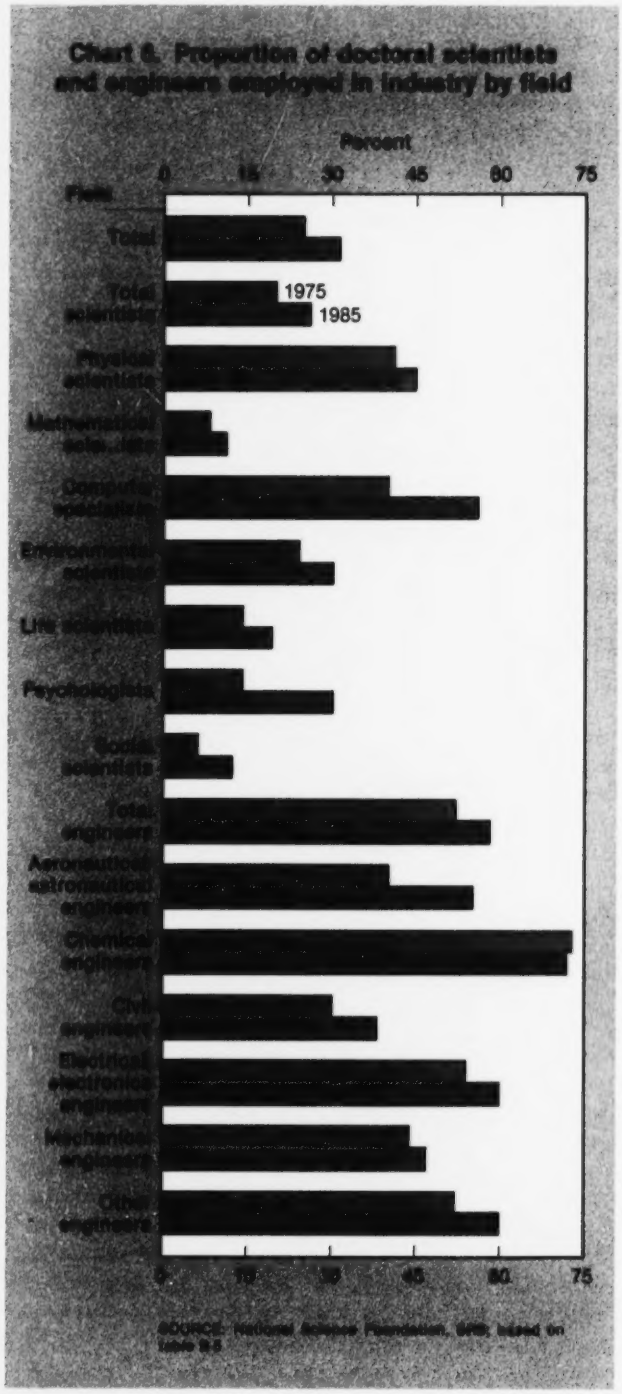
Industrial employment of doctoral scientists and engineers increased more rapidly than did the average growth rate across all employment sectors over the 1975-85 decade. This growth has been accompanied by shifts in reported work activities; these shifts indicate changes in the character of activities in the industrial sector.

The number of doctoral scientists and engineers in industry grew from about 65,000 in 1975 to 125,000 in 1985, an increase of about 7 percent per year. In 1985, almost one-third of all doctoral scientists and engineers worked in this sector, up from one-quarter in 1975.

Over the decade, employment of scientists in industry increased more rapidly than did that of engineers (7.5 percent versus 5.5 percent annually). Among major science fields, computer specialists showed the most rapid growth, rising from 1,400 to 8,400, an increase of 19 percent per year. Other major fields showing increases significantly above the average included psychology and social sciences. Notably slower growth was recorded by physical scientists. Among engineering fields, the most rapid increase for the decade was in aeronautical/astronautical engineering, up at an annual average rate of 10 percent. Growth in this field reflects the increased emphasis on national defense. On the other hand, chemical, material science, and nuclear engineering rose at below average rates.

Variations in growth among fields altered the distributions of those doctoral scientists and engineers in industry. For instance, as a proportion of total doctoral employment in industry, the number of physical scientists declined from 34 percent in 1975 to 24 percent in 1985. (See table B-4 for actual changes in employment.) In contrast, computer specialists represented 2 percent of the total in 1975 and more than 6 percent in 1985; the proportion who were psychologists rose from 6 percent to 12 percent. Roughly 80 percent of the increase in psychologists represents growth in the number of those who were self-employed. Reflecting the slower average growth among engineers, their proportion in industry declined from 34 percent to 30 percent over the decade.

Industry's significance in providing employment opportunities for doctoral scientists and engineers varies considerably by field (chart 6). For example, about three-fifths of



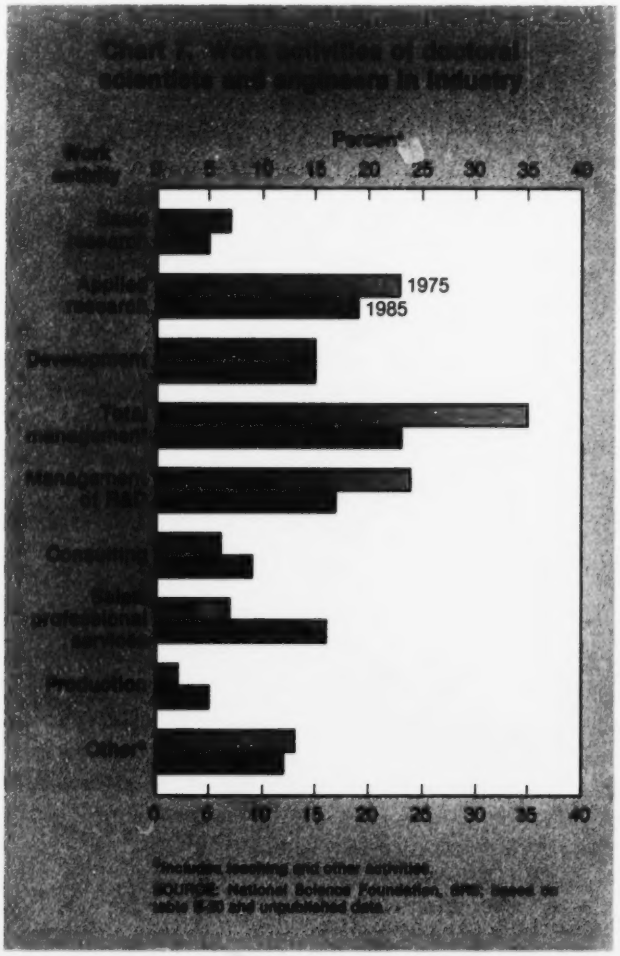
computer specialists and engineers were in this sector, compared to only about one-tenth of either social or mathematical scientists. Regardless of field, however, the proportions of doctorates employed in industry in 1985 were above those for 1975.

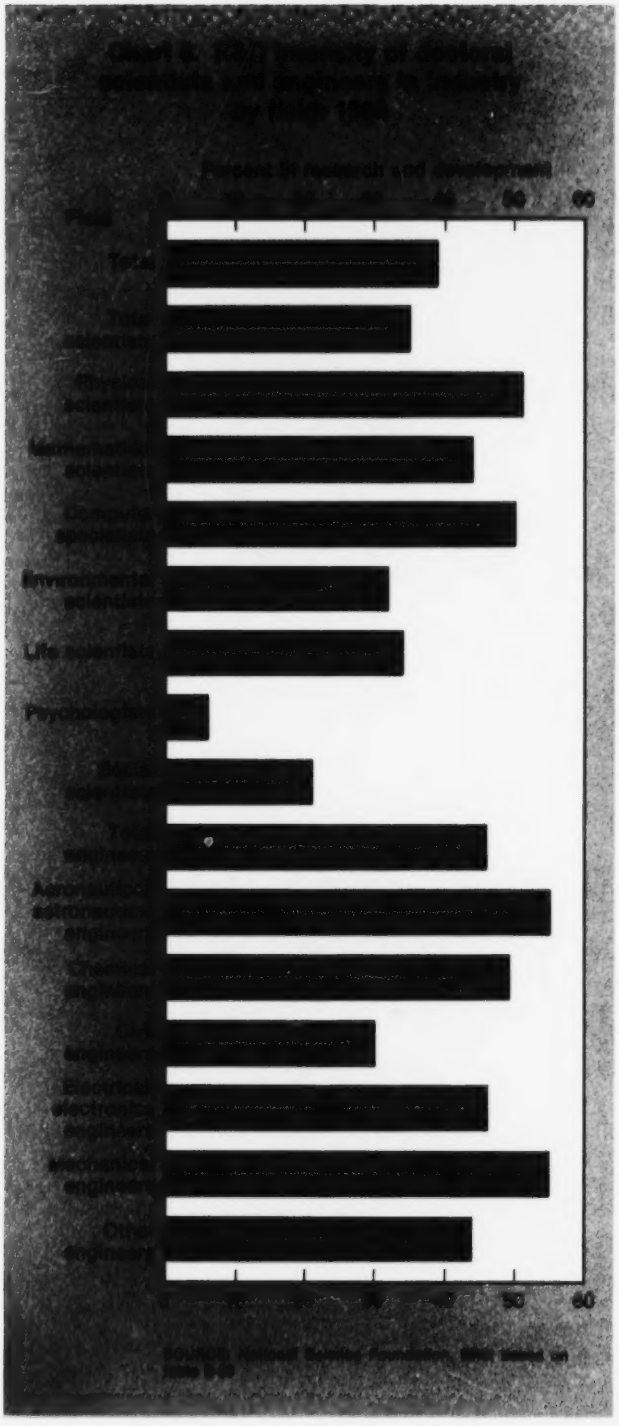
As stated earlier, reported work activities of industrial doctoral scientists and engineers have shifted over the 1975- 85 decade (chart 7). In general, those in 1985 were less likely than those in 1975 to report research and development or management as their major activity; they were, however, more likely to report sales, professional services, and production and related work. In part, these shifts reflect: (a) the drive to improve industrial competitiveness through enhanced quality control and other aspects of the production process, and (b) the increasing numbers of psychologists providing professional services to individuals.

In 1985, about 39 percent of Ph.D. scientists and engineers in industry reported research and development as their major work. This fraction was down from 45 percent in 1975. Shifts in employment away from R&D-intensive fields (e.g., physical sciences) and toward those fields that are not R&D intensive (e.g., computer specialties) account for about one-half of the decline in this proportion. The remainder of the decline reflected changing activity patterns for each field. The R&D intensity of major fields is shown in chart 8. Among these fields, only those employed in life and social sciences showed an increase in R&D intensity.

Doctoral scientists and engineers citing management (both of R&D and non-R&D projects) as their major activity increased at an annual rate of only 2.4 percent over the 1975-85 decade. As a result of this relatively slower growth rate, the proportion reporting this activity declined from 35 percent in 1975 to 23 percent in 1985. If, however, management of research and development is separated from more general management, a very different pattern emerges. The number in R&D management rose at an annual rate of 3.4 percent while the number in general management remained virtually unchanged.

One of the fastest growing work activities within industry has been that reported as "sales or professional services." The number re-





porting this activity rose from 4,400 in 1975 to 20,000 in 1985, representing an average increase of 16 percent per year. Doctoral scientists and engineers in these activities rose from 7 percent to 16 percent.

Most of those reporting "sales or professional services" as their major work were providing professional services: 15,000 in 1985. Furthermore, almost three-quarters of those reporting this activity were psychologists. Over the decade, psychology was one of the most rapidly growing fields within business and industry.

The number of doctoral scientists and engineers reporting their major

activity as production increased at an annual rate of 16 percent over the 1975-85 decade, rising from 1,300 to 5,800. As a proportion of total employment, those in production and related activities increased from 2 percent to almost 5 percent. Production and related activities include operations, maintenance, installation, quality control, testing, and evaluation.

the academic perspective

Employment of doctoral scientists and engineers in educational institutions reached 212,000 in 1985. This number was up from 149,000 in 1975 and represented an annual increase of 3.6 percent. In 1985, about 95 percent (202,000) of those in academic institutions were in 4-year colleges and universities. Of the remainder, 6,000 were employed in 2-year colleges, and 3,600 worked in elementary and secondary schools. Over three-fifths of those doctorates in elementary or secondary schools were either psychologists or life scientists.

Since most of the doctoral scientists and engineers in educational institutions are in 4-year colleges and universities (where most academic science and engineering research takes place), the following analysis focuses on individuals at these institutions.

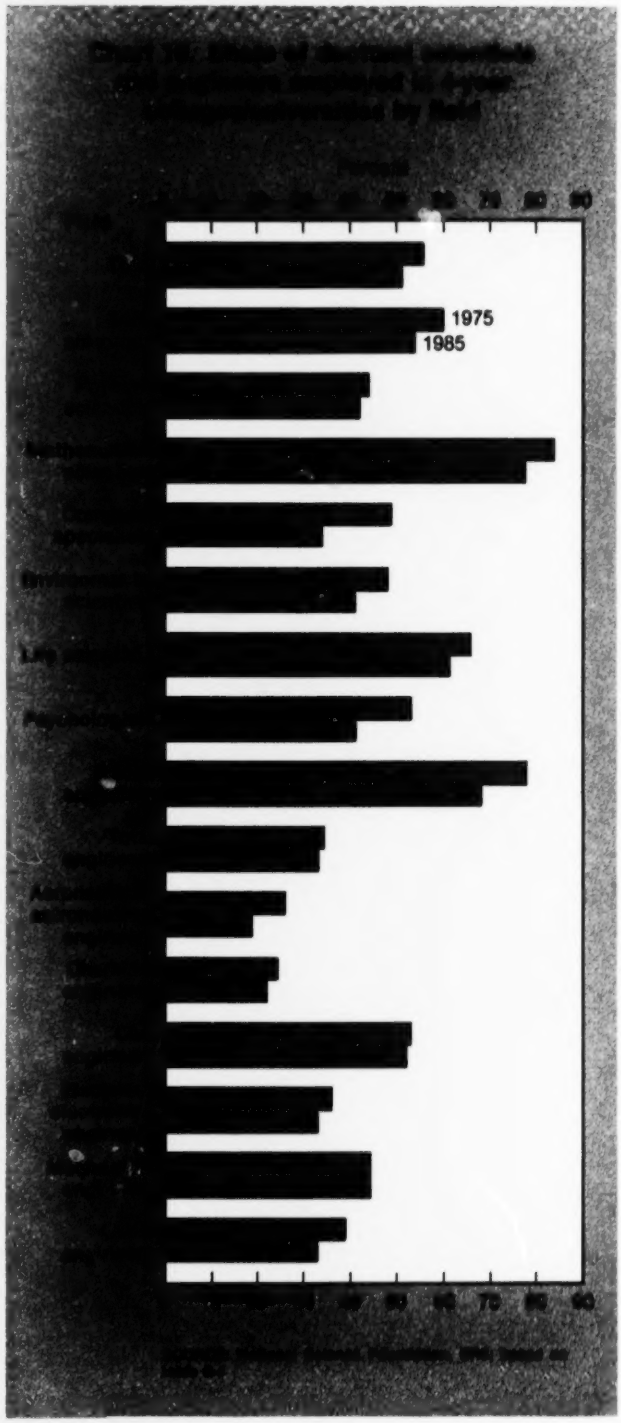
Employment of doctoral scientists and engineers at 4- year colleges and universities grew at an annual rate of 3.5 percent over the decade (chart 9). The largest growth occurred in the number of computer specialists; this number increased at an annual rate of almost 12 percent. Other major fields showing above average increases were the life and social sciences and engineering. Slower than average growth was recorded by physical, environmental, and mathematical scientists, and psychologists. Differences in growth rates changed the field distribution of doctoral scientists and engineers. For example, the proportion who were physical scientists declined from about 17 percent to 14 percent, while the proportion who were social scientists rose from 20 percent to 22 percent over the 1975-85 decade.

The relative importance of the academic sector in providing employ-

ment opportunities for doctoral scientists and engineers varies considerably by field. This sector, for example, employs 78 percent of the mathematicians but only 19 percent of doctoral-level aeronautical engineers. Four-year colleges and universities employ more than one-half of the doctoral-level mathematical, life, and social scientists. For engineers, civil engineering is the only field where more than one-half of those in the field are employed by academia; among other engineering fields, the proportion ranged from 44 percent of the mechanical engineers to 19 percent of the aeronautical engineers. Since 1975, the share of doctoral scientists and engineers employed in 4-year colleges and universities has declined for all major fields except chemical, civil, and mechanical engineering (chart 10).

Reported work activities of doctoral scientists and engineers in academia have changed over the decade. Although teaching remains the major activity, it grew slower than did most others. The number reporting research and development as their major activity, for example, increased at an annual rate of 5.5 percent over the 1975-85 period while the number reporting teaching as their major work rose at an annual rate of only 1.8 percent. Because of these different growth rates, the proportion reporting research and development as their major activity rose from 25 percent in 1975 to 30 percent in 1985. The proportions reporting teaching as their major activity declined from 60 percent to 51 percent over the same period.

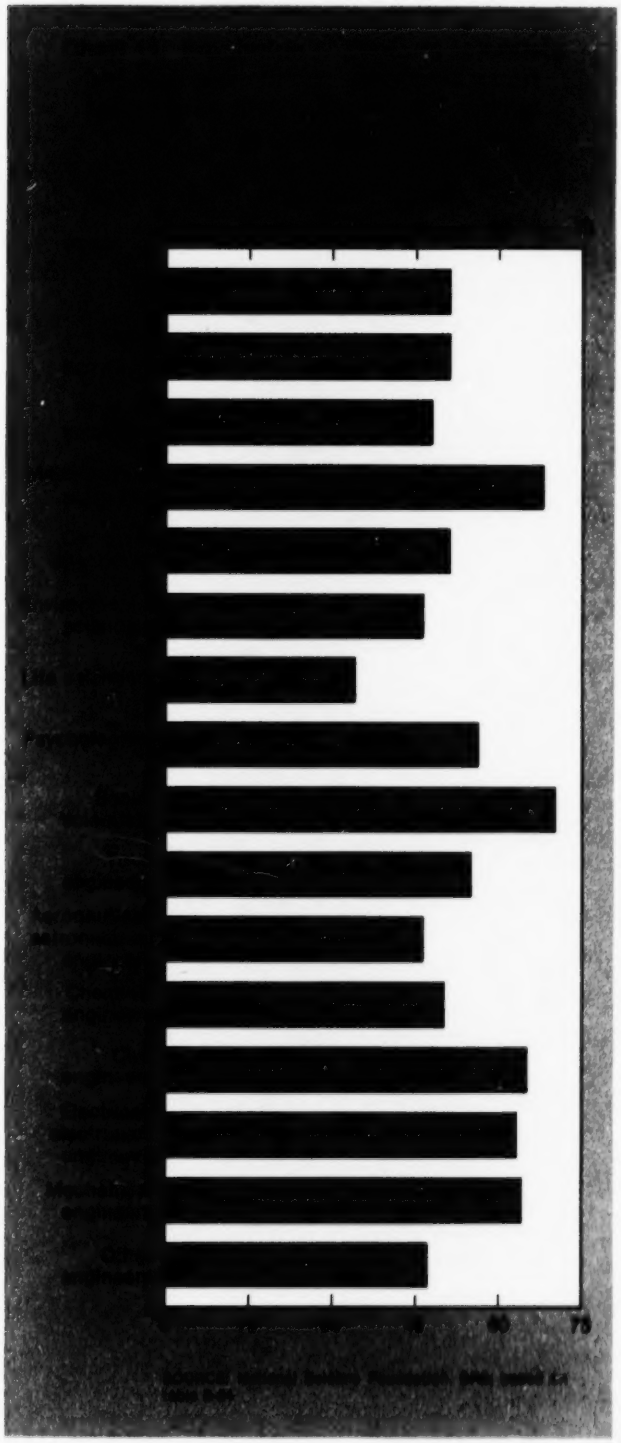
The more rapid increase in R&D employment mirrors the growth in academic R&D expenditures: these expenditures increased (in constant dollars) more than 4 percent per year.[4] The relatively slow growth in the number reporting teaching as their major activity reflects, to some extent, the small increase in the number of students earning degrees in science and engineering.



The relative importance of teaching varied by field in 1985, ranging from 70 percent for social scientists to 33 percent for life scientists (chart

[4]Based on National Science Foundation, *National Patterns of Science and Technology Resources: 1986* (NSF 86-309)(Washington, D.C., 1986), p. 37.

11). Declines in the relative importance of teaching were reported for all major science and engineering fields. Absolute declines were recorded for physical and environmental scientists.



sectoral mobility

Over the 1975-85 period, the sectoral mobility patterns of doctoral scientists and engineers have been mixed (table 3). In general, there has been little flow into or out of academia; on the other hand, there have been substantial movements among public sectors (Federal and State/local) and other sectors. Inflows to industry have been greater than outflows.

The number of employed doctoral scientists and engineers rose from 256,000 in 1975 to 400,000 in 1985. Focusing on those who were employed in both 1975 and 1985 permits an examination of mobility among employment sectors. Sectoral mobility can be viewed from two perspectives: (1) flows out of a sector; and (2) flows into a sector.

Outflows from the major employment sectors were not large over the 1975-85 decade (table 3). For example, about 91 percent of those employed in industry in 1975 also were employed in industry in 1985; only about 5 percent had left industry for a job in a 4-year college or university. The proportion who remained in 4-year colleges or universities over the decade was about 87 percent, while about 8 percent had left academia for a job in industry. Table 3 also shows relatively large outflows from the government sectors: most who left the public sectors moved to jobs in industry. For example, only about 48 percent of those employed in State and local government in 1975 were still in that sector by 1985, while about 26 percent had switched to a job in industry. These outflows from the public sector may reflect the impact of lower salaries compared to those paid by industry.

The largest inflows were into the industrial sector (table 3). Of those employed in industry in 1985, about 72 percent were in industry in 1975. Roughly 16 percent of those in industry in 1985 had been employed in a 4-year college or university in 1975.

Table 3. Sectoral flows of doctoral scientists and engineers: 1975-85

(Percents)

OUTFLOWS

Sector	Sector in 1985					
	Total	Industry	4-year colleges and universities	Federal Government	State/ local government	All other sectors
Sector in 1975						
Total	100	31	54	7	1	7
Industry	100	91	5	2	[1]	2
4-year colleges and universities	100	8	87	2	1	2
Federal Government	100	13	8	74	1	4
State/local government	100	26	13	2	48	11

INFLOWS

Sector	Sector in 1985				
	Total	Industry	4-year colleges and universities	Federal Government	State/ local government
Sector in 1975					
Total	100	100	100	100	100
Industry	24	72	2	5	6
4-year colleges and universities	58	16	94	13	23
Federal Government	7	3	1	77	3
State/local government	2	1	[1]	[1]	50
All other sectors	9	8	3	5	18

[1]Less than 0.05 percent.

SOURCE: National Science Foundation, SRS; based on unpublished data

section iii

age profiles

The average age of the doctoral S/E population has increased over the decade. This increase reflects the relatively level production of new doctoral scientists and engineers (between 17,000 and 18,000 per year) and the resulting slowdown in the rate of growth in the number of employed S/E doctorates. In 1975, 25 percent were under age 35 and 14 percent were 55 years of age or older. By 1985, 14 percent were under 35 years of age and 19 percent were 55 or older. Examining the age profiles by field reveals relatively little differences except for computer specialists: in 1985, only about 8 percent of computer specialists were 55 or older, compared to 19 percent of all scientists and engineers.

Doctoral scientists and engineers in academia, on average, are older than their colleagues in industry. In 1985, 21 percent of those in academia and 16 percent of those in industry were 55 or older.

An analysis of age profiles by work activity suggests that younger doctoral scientists and engineers are much more likely than their more senior colleagues to work in research and development, especially basic research. More than one-half (55 percent) of all those under 35 years of age were in research and development compared to only 23 percent of those 55 years of age or older (table 4).

On average, those doctoral scientists and engineers who reported teaching as their primary work activity were older than those who reported R&D work. In 1985, only 9 percent of those involved mostly in teaching were under 35; 24 percent were 55 or over.

Table 4. Doctoral scientists and engineers by age and selected work activity: 1985

Age	Percent engaged in			Percent distribution		
	Total research and development	Basic research	Teaching	Total research and development	Basic research	Teaching
Total	33.1	15.3	27.9	100.0	100.0	100.0
Under 35 ...	54.7	29.9	18.9	22.5	26.6	9.2
Under 40 ...	45.5	22.9	21.7	45.6	49.5	25.8
Under 50 ...	37.0	17.5	25.0	78.7	80.2	62.9
Under 55 ...	35.4	16.6	26.1	86.8	87.9	75.9
55 and older	23.1	9.8	35.6	13.2	12.1	24.1

SOURCE: National Science Foundation, SRS; based on table B-3 and unpublished data

section iv

salaries

The median annual salary for Ph.D. scientists and engineers increased faster than the average weekly earnings in selected nonagricultural industries, but slower than the Consumer Price Index (CPI) between 1975 and 1985. The median salary for doctoral scientists and engineers rose 93 percent ($23,200 to $44,800), while the average weekly earnings in nonagricultural industries rose 83 percent,[5] and the CPI was up 100 percent.

Salaries for doctoral scientists and engineers vary by field, sector, work activity, and years of professional experience. In 1985, median annual salaries for scientists ($42,500) were below those for engineers ($52,400). The highest S/E salaries were reported by chemical engineers ($55,700); the lowest salaries ($39,500) were reported by psychologists.

Examining the decile range of salaries shows a slightly different pattern across fields (table 5). Engineers' salaries at both the lower and upper decile were higher than the corresponding salaries of scientists. Among the lower decile salaries of scientists, psychologists reported the lowest; at the upper decile level, the lowest salaries were reported by mathematical scientists.

Doctoral scientists and engineers in industry reported salaries sub-

Table 5. Lower and upper deciles and median annual salaries of doctoral scientists and engineers by field: 1985

Field	In dollars		
	Lower decile	Median	Upper decile
Total	28,600	44,800	69,700
Total scientists	27,600	42,500	67,200
Physical scientists	30,800	47,000	70,300
Mathematical scientists	28,600	42,100	62,200
Computer specialists	30,700	46,000	68,300
Environmental scientists	30,500	46,600	68,900
Life scientists	27,300	41,700	66,600
Psychologists	25,900	39,500	65,800
Social scientists	26,200	40,500	64,400
Total engineers	39,000	52,400	77,600
Aeronautical/astronautical	39,600	53,800	70,700
Chemical	39,900	55,700	84,500
Civil	35,400	48,500	70,000
Electrical/electronics	39,700	55,100	82,700
Materials science	39,900	51,800	73,200
Mechanical	39,100	51,100	71,000
Systems design	40,200	54,600	75,800

SOURCE: National Science Foundation, SRS; based on unpublished data

[5]*Economic Report of the President*, op. cit.

stantially above those received in other sectors. In 1985, the average in industry was $52,000 per year; this salary was more than $11,000 above the average in educational institutions. In 1975, the highest earned salaries were those in the Federal Government with industry running a very close second. In 1985, salaries of those in the Federal Government averaged $48,400 or 7 percent below those in industry (appendix table 28).

Doctoral scientists and engineers citing R&D management as their major work activity reported annual salaries of $60,300 in 1985, 35 percent higher than the average. The lowest salaries ($39,200 or about 12 percent below average) were reported by those primarily engaged in teaching (table B-29).

Finally, salaries increase with number of years of professional experience. In 1985, those with 1 year or less of professional experience reported salaries of $30,400, while those with 35 years or more of experience reported salaries of about $60,000. (See table B-33.)

section v

women and minorities[6]

women

Levels and trends. The number of employed women holding doctorates in science and engineering more than doubled between 1975 and 1985, increasing from 22,000 to more than 58,000. This sharp increase represented an annual average growth rate of more than 10 percent. In comparison, employment of doctoral men scientists and engineers rose only about 4 percent per year over the same period.

Annual growth rates in employment have slowly declined for both Ph.D. women and Ph.D. men throughout the decade. For example, the annual growth rate for doctoral women scientists and engineers was 11.8 percent between 1975 and 1977; between 1981 and 1985, the annual rate of increase averaged somewhat more than 9 percent. This trend was similar for men scientists and engineers: between 1975-77, their annual average employment growth rate was 4.9 percent; it fell to 2.9 percent between 1981-83; and rose somewhat to 3.3 percent during the last 2-year period.

The above average growth rate in employment for Ph.D. women scientists and engineers throughout the decade reflects their above average growth in terms of degree production. Between 1975 and 1985, the number of S/E doctorates granted to women rose from 2,836 to 4,655. Conversely, the number of such degrees earned by men declined from 15,522 to 13,606.

Annual average employment growth rates for women outpaced those for men across all fields of science and engineering between 1975 and 1985. The highest rate for women (27 percent per year) was posted among those holding Ph.D.s and working as computer specialists; the lowest rate (6 percent annually) was among doctoral mathematical scientists. For men, the corresponding annual growth rates ranged from 15 percent (computer specialties) to 2 percent (mathematical sciences).

Despite more rapid growth rates across all fields, women accounted for only 15 percent of all employed doctoral scientists and engineers in

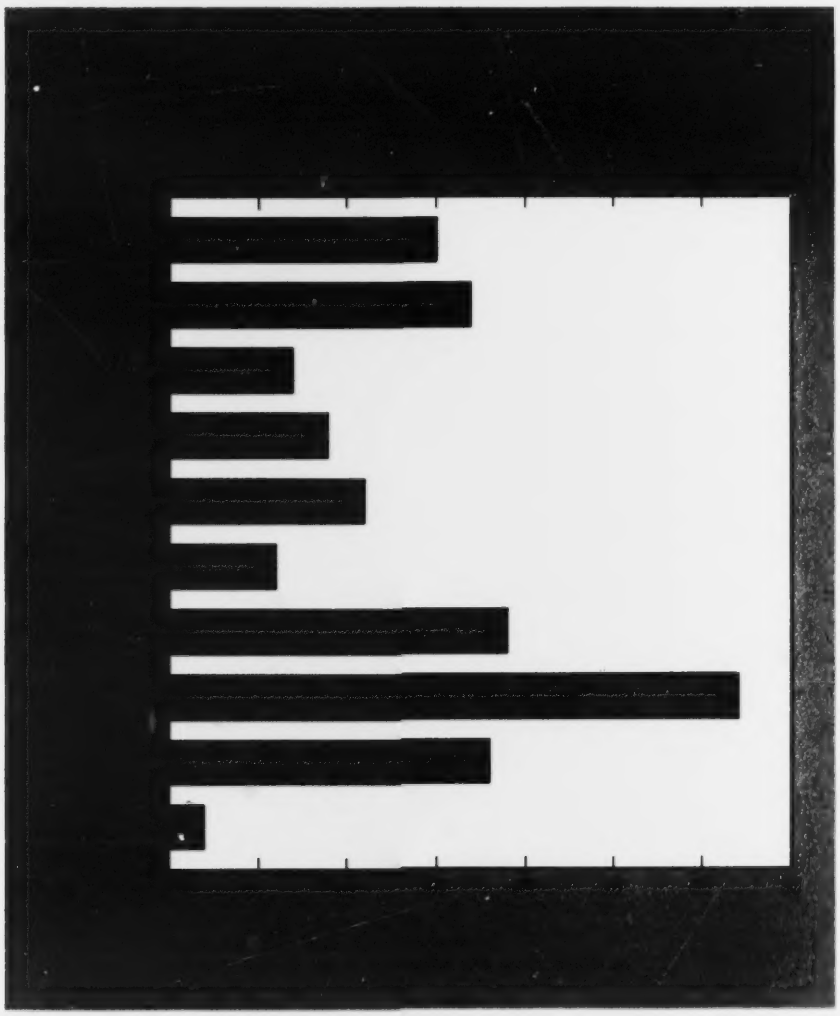
[6]For additional information on doctoral women and minority scientists and engineers, see National Science Foundation, *Women and Minorities in Science and Engineering* (NSF 88-301)(Washington, D.C., January 1988).

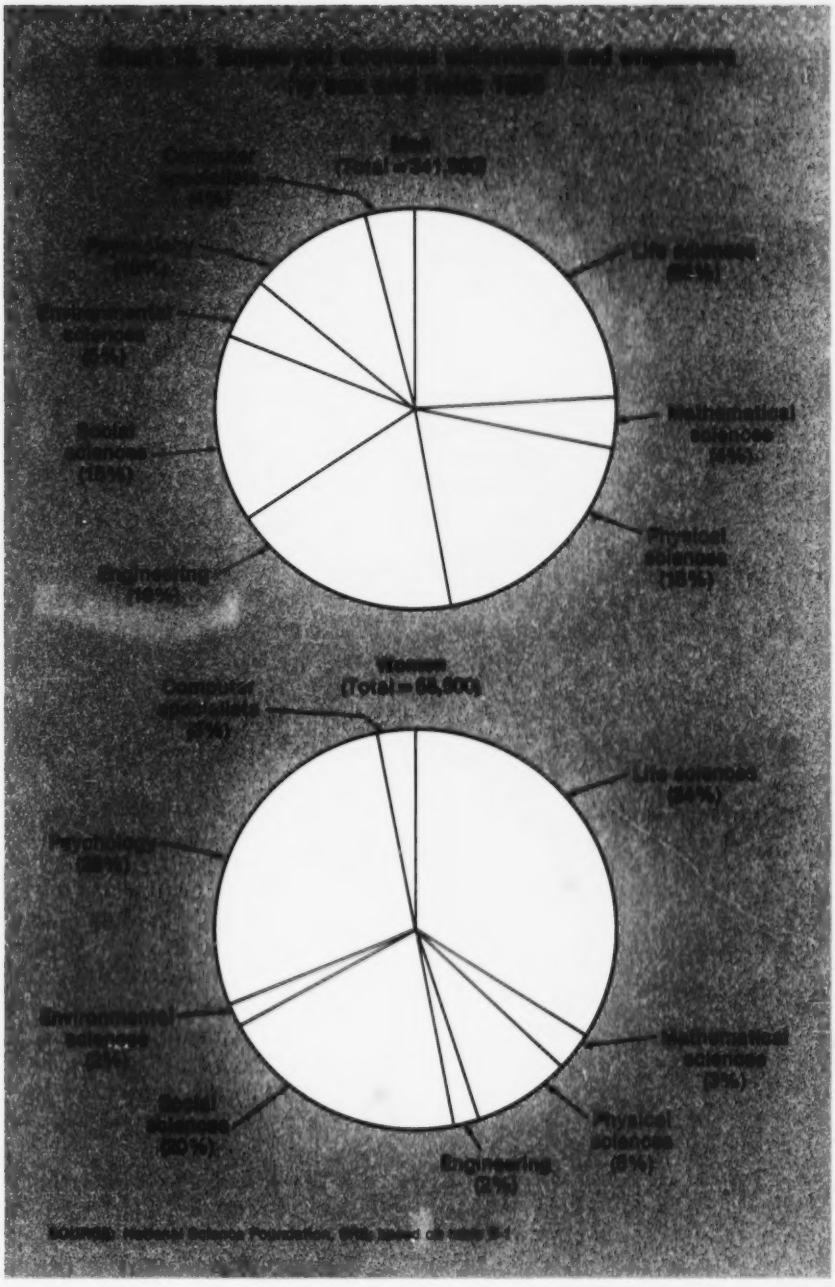
1985; this fraction was, however, up from 9 percent in 1975. Representation of women varies considerably by field (chart 12). For example, in the sciences, women accounted for 32 percent of Ph.D. psychologists, but only 4 percent of Ph.D. physicists, in 1985. About 2 percent of doctoral engineers were women.

Field distributions differ significantly between women and men (chart 13). Ph.D. women are much more likely to be scientists than engineers and within the sciences, they are concentrated in the life sciences (especially biology), psychology, and the social sciences. In contrast, men are more often in the physical and life sciences and engineering.

Salaries. In 1985, overall median annual salaries reported by doctoral women scientists and engineers averaged 77 percent of those reported by men: $35,500 versus $46,000. By field, the narrowest differential was in psychology where salaries for women ($34,800) averaged about 86 percent of those for men ($40,700). The widest differentials (81 percent) occurred in the physical and life sciences.

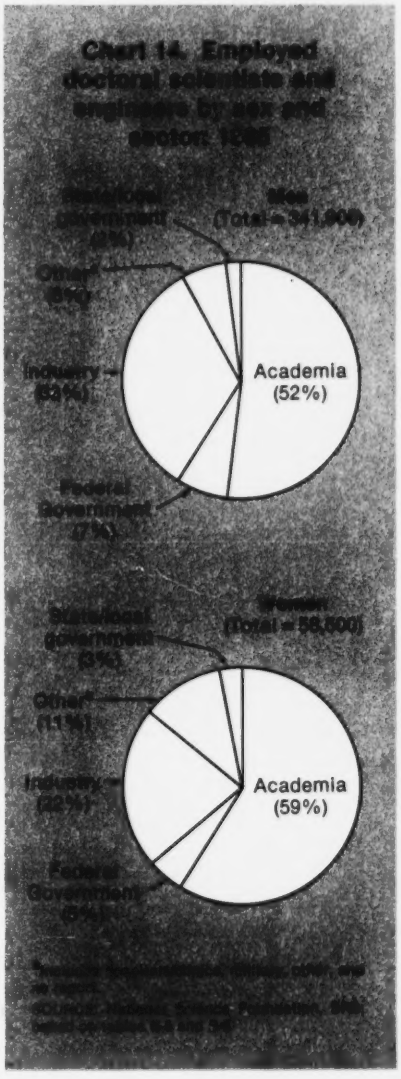
The wider overall salary differential partially results from differences in field concentrations of Ph.D. women and men. Men are more heavily concentrated than are women in those fields (e.g., physical science and engineering) that report above average annual salaries. From 1975-85, this overall salary differential has widened: in 1975, women's salaries ($19,100) averaged 81 percent of men's salaries ($23,500). Again, the differential reflects employment growth patterns among fields since women are more heavily concentrated in fields where below average salaries are reported.





and 1985, the annual increase in industrial employment was 20 percent for women compared to only 6 percent for men. Given this above average rate, the fraction of women employed in industry rose from 10 percent (2,100) in 1975 to 22 percent (12,900) in 1985.

Annual sectoral growth rates over the decade for Ph.D. women were 8 percent in academia and 10 percent in the Federal Government. For doctoral men, comparable rates were 3 percent per year for both sectors.



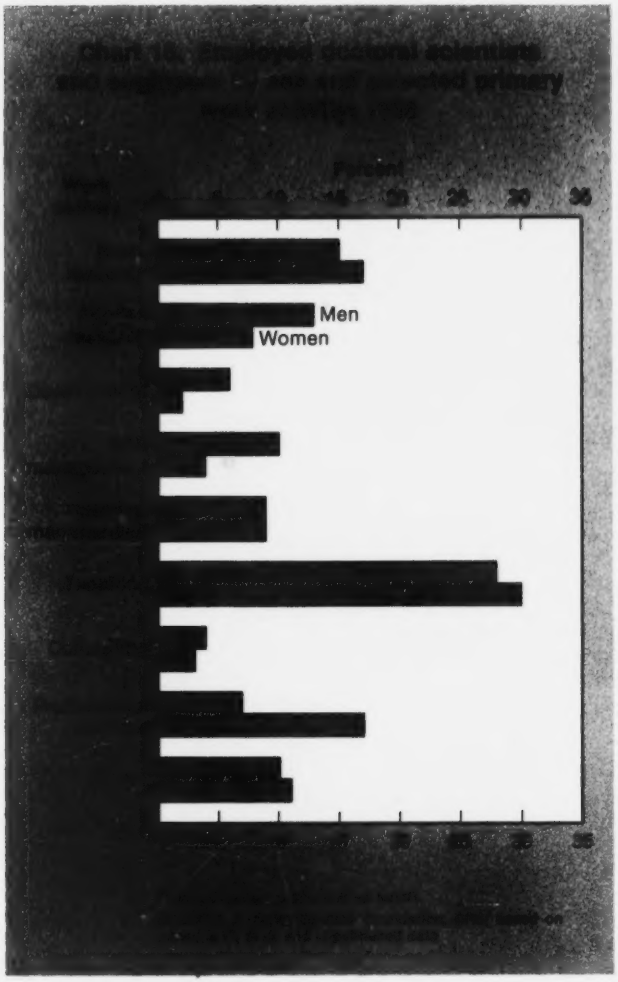
Sector. Doctoral women and men are concentrated in different employment sectors (chart 14). Although academia employs the largest proportions of both women and men, women are more likely to work in educational institutions. The differences in sectoral distribution between the sexes have narrowed during the decade. For example, in 1975, 70 percent of women and 57 percent of men worked in academia; by 1985, these proportions were 59 percent and 52 percent, respectively.

Industry has been the fastest growing sector of employment for both Ph.D. women and men throughout the decade. The annual average growth rate for women in industry, however, has more than tripled that for men. Between 1975

Work activities. There are significant differences in the work activities reported by doctoral women compared to those of doctoral men (chart 15). For example, about one-third of both Ph.D. women and men report research and development as their primary work activity. Within research and development, however, three-fifths of women, but slightly more than two-fifths of men, were primarily engaged in basic research. Ph.D. women have fewer years of professional experience than do men; this fact helps explain why almost three times as many doctoral men than women report R&D management as their primary work. In 1985, more than one-half (54 percent) of all doctoral women scientists and engineers reported less than 10 years' professional experience compared to 28 percent of doctoral men.

Women are much more likely than men to report professional services as their major activity. In 1985, about 16 percent of Ph.D. women, compared to less than 7 percent of Ph.D. men, reported this activity. Regardless of sex, a large majority of those who report this activity are psychologists: 83 percent of women and 63 percent of men.

Since 1975, the fastest growing work activities for doctoral women have been development (20 percent per year), professional services (15 percent), applied research (14 percent), and consulting (14 percent). Among Ph.D. men, growth in the number reporting professional services (11 percent), consulting (10 percent) and development (6 percent) outpaced all other activities. Teaching, the work activity of a large fraction of doctoral scientists and engineers, showed relatively low annual growth rates for both women (6 percent) and men (1 percent): this slower growth partially reflects the relatively low growth rates in overall academic employment.

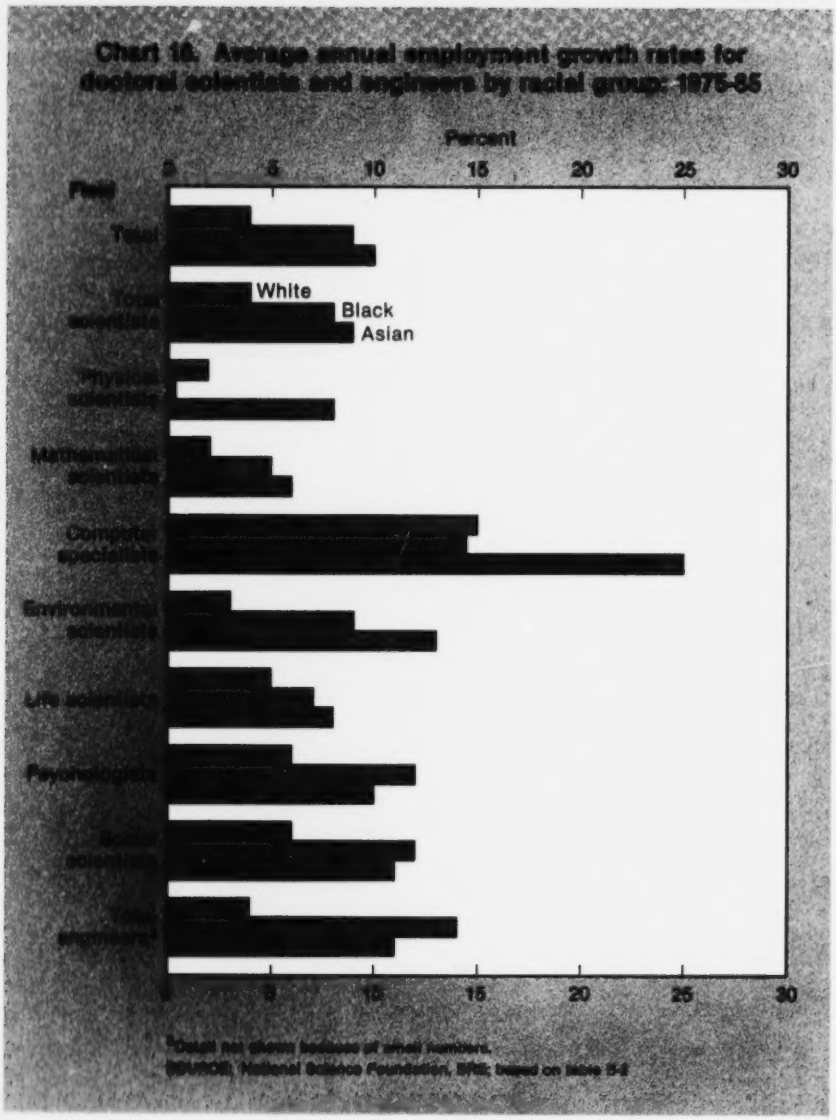


racial minorities

Levels and trends. The number of employed doctoral scientists and engineers who were members of racial minority groups rose from 16,500 in 1975 to 41,100 in 1985. Almost all (85 percent) of this increase is attributable to the increased number of Asian Ph.D.'s which rose from 13,600 to 34,500. Employment of black Ph.D. scientists and engineers also increased sharply from 2,500 in 1975 to 5,700 in 1985.

Annual average employment growth rates for both Asians and blacks were generally higher than those for whites across all S/E fields (chart 16). However, the fastest growing field regardless of racial group was computer specialties. Growth rates ranged from 15 percent for blacks to 25 percent for Asians.

The above average growth rates for both Asians and blacks reflect rapid rates of doctoral degree production. For Asians, the number of S/E degrees awarded rose from 1,700 in 1975 to almost 2,900 in 1985. This increase is completely attributable to the increasing numbers of doctoral degrees awarded to Asians with temporary visas; over the decade, the number of degrees granted to such individuals rose from 900 to almost 2,100. The increase in degree production for blacks was not quite as dramatic: between 1975 and 1985, the number of S/E doctorates earned by blacks increased from 370 to almost 540.



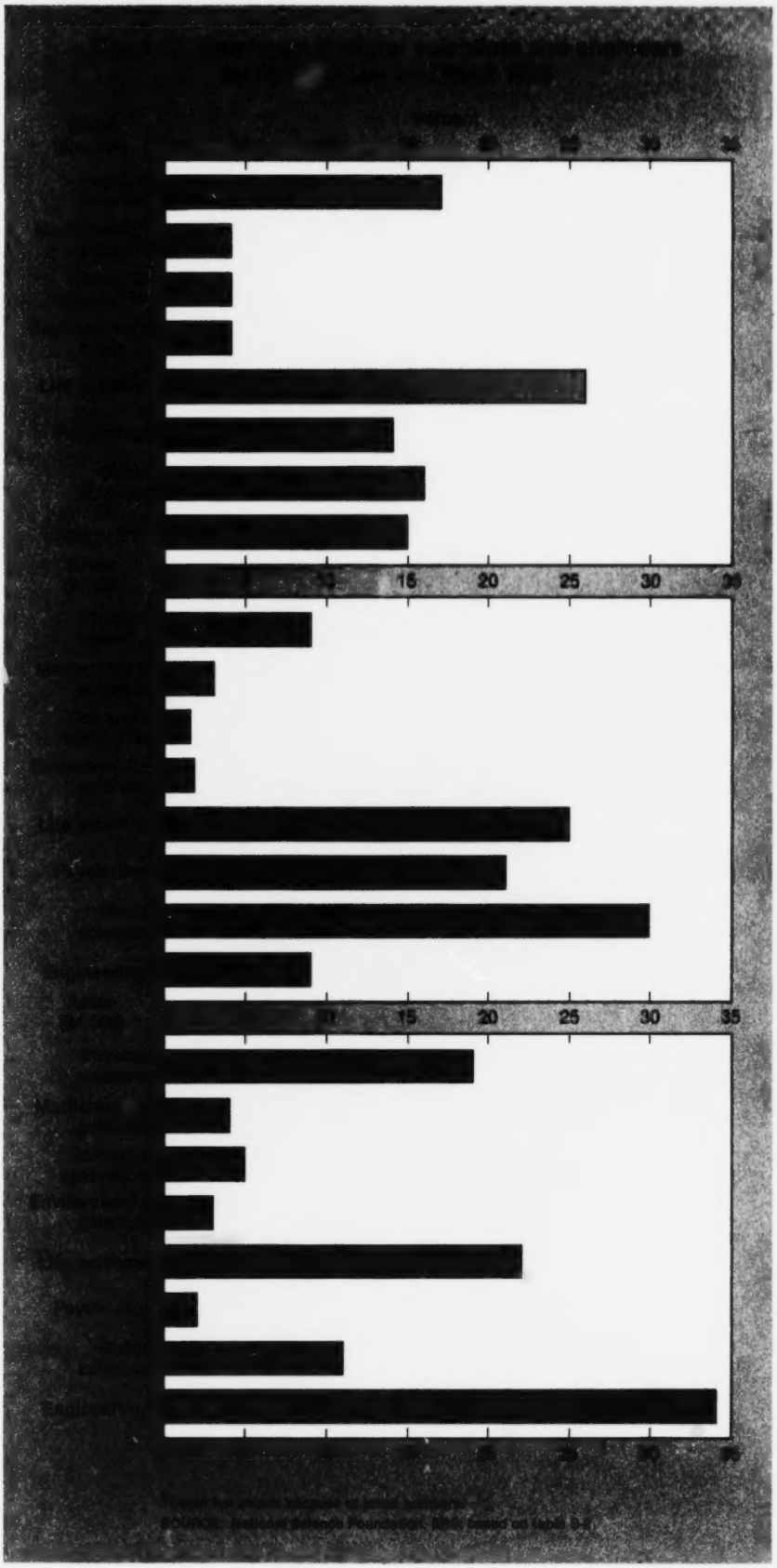
Consistent with their high growth rates in employment, representation of Asians among doctoral scientists and engineers rose substantially over the decade. In 1985, Asians accounted for 8.6 percent of employed Ph.D. scientists and engineers, up from 5.3 percent in 1975. The representation of blacks also increased, from 1.0 percent in 1975 to 1.4 percent in 1985.

Minority representation varies substantially by S/E field. For example, Asians account for a little more than 1 percent of Ph.D. psychologists but 27 percent of Ph.D. chemical engineers. Blacks, on the other hand, account for about 3 percent of Ph.D. social scientists, but less than 1 percent of doctoral engineers.

Field distributions also differ across racial groups (chart 17). While more than one-third of employed Asian Ph.D.s are engineers, about one-seventh of whites, and one-tenth of blacks were employed in this field. Among black doctoral scientists and engineers, more than three-quarters were in either the social or life sciences, or in psychology.

Salaries. Black doctoral scientists and engineers report median annual salaries lower than those of either their white or Asian counterparts regardless of S/E field. In 1985, overall median salaries were $40,100 for blacks, $44,800 for whites, and $45,500 for Asians. The largest difference in annual salaries occurred in engineering where salaries for blacks averaged $45,600 compared to $50,300 and $53,600 for Asians and whites, respectively. Since 1975, the salary differences between racial groups have increased; at that time, the reported annual salaries were $22,800 (blacks), $23,300 (whites), and $21,500 (Asians).

Sector. Both black and white Ph.D. scientists and engineers are much



more likely to be employed in academia than are Asians. In 1985, two-thirds of blacks, a little more than one-half of whites, but only slightly more than two-fifths of Asians, worked in academia. This lower fraction among Asians partially reflects their field concentrations. For example, a high proportion of Asian Ph.D.s were engineers; in 1985, two-thirds of these Asian Ph.D.s were employed in industry. For all racial groups, industry was the fastest growing employment sector between 1975 and 1985. Annual growth rates were 13 percent for Asians, 11 percent for blacks, and 6 percent for whites.

Work activities. Primary work activities differed substantially by racial group. For example, in 1985, black doctoral scientists and engineers reported teaching (38 percent) more often than other activities; Asians, however, were more likely to report activities related to research and development (50 percent). Whites, too, reported the largest fraction (32 percent) in research and development. Over the 1975-85 decade, the fastest growing work activities for both black and white doctoral scientists and engineers were development and consulting; for Asians, development and R&D management activities registered the highest rates of growth.

hispanics

Levels and trends. There were almost 5,900 Hispanic doctoral scientists and engineers employed in the United States in 1985, up from 2,000 10 years earlier. This increase represents an annual growth rate of over 11 percent. In comparison, the annual employment growth rate for all doctoral scientists and engineers was only 4.6 percent. Growth rates for Ph.D. Hispanics, however, have slowed during the decade. For example, between 1975 and 1977, they registered an annual rate of about 15

percent; during the 2-year period ending in 1979, this rate increased to 24 percent per year; but by the 1983-85 period, their annual growth rate in employment had fallen to about 4 percent.

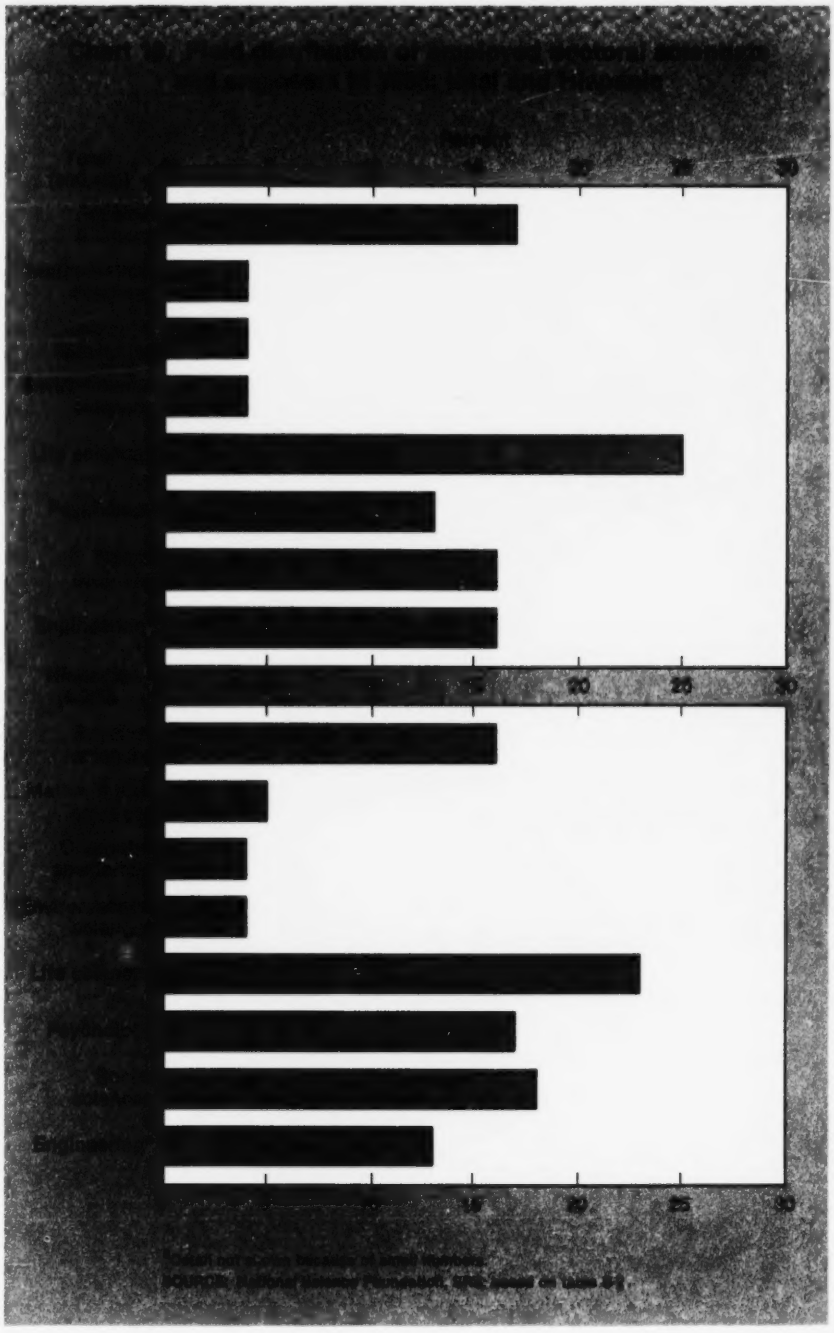
Doctoral degree production among Hispanics more than about doubled over the decade: in 1975, about 220 doctorates were awarded to Hispanics; this number increased to 560 in 1985. Of the 1985 degrees, about one-half were granted to Hispanics with temporary visas.

By 1985, doctoral Hispanic scientists and engineers accounted for 1.5 percent of the total work force, up from 0.8 percent in 1975. The field distribution of Hispanics is similar to that of all Ph.D. scientists and engineers (chart 18): they are much more likely to be scientists rather than engineers; within the sciences, they are concentrated in the life and social sciences.

Salaries. The median annual salary of doctoral Hispanic scientists and engineers was below that for all Ph.D.s ($42,200 versus $44,800) in 1985. This gap has increased since 1975, when salaries were $22,500 (Hispanics) and $23,200 (all Ph.D.'s).

Sector. More than one-half (53 percent) of Ph.D. Hispanics were employed in the academic sector in 1985; another one-quarter (27 percent) worked in industry. This distribution does not differ substantially from that of all doctoral scientists and engineers. For Hispanics, the fastest growing sector over the decade was industry: employment has increased at almost 17 percent per year over the decade. The comparable annual growth rate for all Ph.D. scientists and engineers was 7 percent.

Work activities. Compared to all doctoral scientists and engineers, Ph.D. Hispanics are more likely to report basic research, general management, or sales/professional services as their primary work activities. They are less likely to report either development or teaching. In 1985, for example, about 21 percent of Hispanics were primarily engaged in basic research and another 21 percent reported teaching as their major activity. For all doctoral scientists and engineers, these percentages were 15 percent and 28 percent, respectively. General management was the fastest growing work activity for Hispanics between 1975 and 1985; in 1985, about 10 percent reported this activity as their primary work.



appendixes

a. technical notes
b. detailed statistical tables
c. reproduction of 1985 survey questionnaire

appendix a

technical notes

The preceding report presents data on the demographic and employment characteristics of the Nation's doctoral scientists and engineers. This population consists of individuals in the United States who hold S/E doctorates or who had received doctorates in non-S/E fields but who, as of 1985, were employed in S/E positions.

The data included in this report were developed from the Survey of Doctorate Recipients, a biennial series initiated in 1973. The population for these surveys encompasses Ph.D. graduating cohorts over a 42-year period. For example, the population for the 1985 survey was comprised of individuals who had received doctorates during the period January 1, 1942, to June 30, 1984. To maintain this 42-year time span for each succeeding survey, the two most recent graduating cohorts of Ph.D.'s are added to the population, while the two oldest are eliminated.

This report contains selected data from six biennial surveys (1975, 1977, 1979, 1981, 1983, and 1985) covering the 1975-85 decade. Based on analysis of individuals' response patterns, revisions were made in 1983 to earlier data: these modifications yielded data that are more accurate and stable over time. Because of these revisions, data appearing in this report may differ significantly from estimates published prior to 1983.

Technical aspects of the Survey of Doctorate Recipients are presented below. Reproduction of the 1985 questionnaire and accompanying specialties list is included in appendix c.

survey universe

Surveys of doctoral scientists and engineers are based on a sample of individuals drawn from a roster of doctorate recipients. This roster is principally compiled from the National Science Foundation's Doctorate Records File, an accumulated record of data on doctorate recipients from U.S. institutions. The file's population consists of those individuals who earned a doctorate in the natural or social sciences, mathematics, or engineering from U.S. institutions; as well as individuals who received research doctorates in non-S/E fields but were known to be employed as scientists or engineers. The population also includes some individuals who had earned their doctorates at foreign institutions and were known to be working as scientists and engineers in the United States.

survey procedures

The sample design of the Survey of Doctorate Recipients includes stratified random sampling with variable sampling rates.[1] Individuals in the sampling frame are stratified according to the following characteristics:

[1]For a detailed discussion of changes in sampling rates used throughout this survey series, as well as other technical details of the survey, see Mary Belisle, *Methodological Report for the 1985 Survey of Doctorate Recipients* (Washington, D.C.: Office of Science and Engineering Personnel, National Research Council), April 1987.

(1) Source and type of degree (U.S. S/E doctorate holders, non-S/E doctorate holders, and foreign doctorate holders),
(2) Sex,
(3) Field of doctorate,
(4) Year of doctorate,
(5) Racial/ethnic identification,[2] and
(6) citizenship.[3]

Variable sampling rates are used to ensure adequate representation of small groups within the population. Within small cells, this has necessitated the inclusion of all available cases; larger cells, however, do not need to be so heavily sampled to yield reliable statistics.

Table A-1. Science/engineering field classification of specialties: 1985 Survey of Doctorate Recipients

Field	Specialty code
Total	000 to 799
Physical scientists	101 to 299
Chemists	200 to 299
Physicists/astronomists	101 to 199
Mathematical scientists	000 to 060, 082 to 099
Mathematicians	000 to 052, 060, 082 to 099
Statisticians	055
Computer specialists	071 to 081
Environmental scientists	301 to 399
Earth scientists	301 to 360, 388 to 395, 398, 399
Oceanographers	370, 397
Atmospheric scientists	381 to 383
Life scientists	500, 503 to 599
Biological scientists	540 to 599
Agricultural scientists	500, 503 to 519
Medical scientists	520 to 539
Psychologists	600 to 699
Social scientists	501, 700 to 799
Economists	501, 720, 725
Sociologists/anthropologists	700, 710
Other social scientists	703 to 709, 727 to 799
Engineers	400 to 499
Aeronautical/astronautical	400
Chemical	430
Civil	420, 480
Electrical/electronics	436, 437, 440, 445
Materials science	435, 475, 490, 497
Mechanical	470, 485
Nuclear	455
Systems design	476 to 478
Other	410, 415, 450, 460, 465, 479, 486, 487, 498, 499

NOTE: See Employment Specialties List associated with 1985 questionnaire for titles of employment specialties.
SOURCE: National Science Foundation

demographic and employment measures

Information on demographic and employment variables is based on individual responses to survey questions.[4] The following definitions are provided to permit effective use of the data presented in this report. (See table A-1.)

Field of science and engineering. Field is derived primarily from the name or title of the specialty most closely related to the respondent's principal employment. Specialties were selected from the Employment Specialties List included with the questionnaire. Individuals failing to respond to this question, as well as those who reported non-S/E employment were assigned the specialty of their doctoral degree.[5]

Sector of employment. Sector of employment is based on information regarding the individual's principal employment. The category "educational institutions" includes junior colleges, 2-year colleges, technical institutes, medical schools (including university-affiliated hospitals or medical centers), 4-year colleges or universities, and elementary or secondary school systems. The category "nonprofit organizations" includes private foundations.

Primary work activity. This variable is determined from responses

[2]Minority status was first introduced in 1975 when it was substituted for "size of doctorate institution" as a stratification variable.

[3]Because of the increased response rate of U.S. citizens as compared with foreign citizens/residents, citizenship was introduced as a stratification variable in 1979.

[4]Specialties are grouped in fields according to the classification presented in table A-1.

[5]For information on the various data collection instruments used throughout this survey series, see National Science Foundation, *Characteristics of Doctoral Scientists and Engineers in the United States* (Detailed Statistical Tables)(Washington, D.C.), biennial series.

to questions requesting the individual's primary work activity and the percent of time devoted to this and other activities. "Development" encompasses design as well as the development of equipment, processes, systems, or data.

Salary. Salary information is derived from responses to questions about annual salary before deductions for income tax, social security, retirement, etc., but excluding bonuses, overtime, summer teaching, or other payment for professional work. Salaries reported are median annual salaries, rounded to the nearest $100 and computed for full-time employed civilian scientists and engineers only. Differences between calendar-year salaries (11 to 12 months) and academic-year salaries (9 to 10 months) have been accommodated by multiplying academic-year salaries by eleven-ninths to adjust to a calendar-year scale.

This report also contains several derived statistical measures reflecting labor force and employment rates, as follows:

Labor force participation rate. The labor force is defined as those employed and those seeking employment. The labor force participation rate (R_{lf}) is the ratio of those employed (E) and those unemployed but seeking employment (U) to the population (P).

$$R_{lf} = (E + U)/P$$

S/E employment rate. The S/E employment rate (R_{se}) measures the ratio of those holding jobs in science and engineering (S&E) to the total employment (E) of scientists and engineers, which includes those holding nonscience and nonengineering jobs.

$$R_{SE} = (S\&E)/E$$

Unemployment rate. The unemployment rate (R_u) shows the ratio of those who are unemployed but seeking employment (U) to the total labor force (E + U).

$$R_U = U/(E + U)$$

reliability of estimates[6]

The survey data presented in this report are subject to error including that resulting from sampling. Sampling variability is that chance variation occurring because a sample, rather than the entire population, was surveyed. The sample selected for any given survey is only one of many which could have been selected using the same sample design and size; estimates based on each of these samples would differ from one another. The deviation of a sample estimate from the average of all possible samples provides the basis for determining the estimate's sampling error. The standard error of a survey estimate provides a measure of the precision with which the estimate approximates the average results of all possible samples.

The estimated standard error may be used to construct confidence intervals—bounds set around the sample estimate in which, with some prescribed probability, the average estimate from all possible samples will lie. Thus, when the reported standard error is added to and subtracted from a survey estimate, the resulting range of values reflects an interval within which about 68 percent of all sample estimates, surveyed under the same conditions, will fall. Intervals reflecting a greater confidence level may be constructed by increasing the number of standard errors for a given estimate. Thus, +/−1.65 standard errors will yield about a 90-percent confidence interval and +/−2 standard errors, about a 95-percent confidence interval.

Table A-2 lists the standard errors associated with estimated survey totals for selected S/E fields based on results of the 1985 survey. These data may be used as a proxy measure for standard errors associated with survey estimates from earlier years.

Alternatively, the standard error of an estimated total (S_x) can be calculated directly using the following formula:

$$s_x = [ax^2 + bx]^{1/2}$$

where "x" equals the estimated total and "a" and "b" are regression coefficients. Values of "a" and "b" for selected S/E fields are presented in table A-3.

Table A-4 presents standard errors associated with a range of estimated percents[7] relating to data from the 1985 survey. Again, these data may be used as a proxy for sampling errors from earlier surveys.

The standard error of an estimated percent may also be calculated directly using the following formula:

$$s_p = p[b((1/x) - (1/y))]^{1/2}$$

where p equals the percent possessing the specific attribute and x and y represent the numerator and denominator, respectively, of the ratio which yields the observed percent.

Note that the standard error estimates included in this report provide approximations of sampling reliability. They therefore should not be considered precise measures.[8]

[6]The data and material on sampling reliability presented here are adoped from *Methodological Report for the 1985 Survey of Doctorate Recipients*, op. cit.

[7]Based upon the ratio of two estimated totals, where the numerator is a subset of the denominator.

[8]The standard error estimates were derived from generalized functions based upon a limited set of characteristics and may overstate the error associated with estimates drawn from strata with high sampling fractions. See *Methodological Report for the 1985 Survey of Doctorate Recipients*, op. cit.

Table A-2. Approximate standard errors of estimated number of scientists and engineers by field: 1985 Survey of Doctorate Recipients

Estimated number	Total science/ engineering	Total sciences	Physical sciences	Mathematical sciences	Computer specialties	Environmental sciences	Life sciences	Psychology	Social sciences	Total engineering	Aeronautical/ astronautical engineering	Chemical engineering	Civil engineering	Electrical/ electronic engineering	Materials science engineering	Mechanical engineering
50	30	30	30	30	30	20	20	30	40	40	(1)	40	40	40	40	40
100	40	40	40	40	50	30	40	40	50	50	—	60	60	60	60	60
200	60	60	60	50	60	50	50	60	70	80	—	80	80	80	80	80
500	90	90	100	80	100	80	80	90	110	120	—	130	130	130	130	130
700	110	110	120	100	120	90	90	110	140	140	—	150	150	150	150	160
1000	130	130	140	120	140	110	110	130	160	170	—	180	180	180	180	190
2500	210	200	220	180	230	170	170	200	250	270	—	290	290	280	280	290
5000	300	280	300	240	320	240	240	280	350	380	—	400	430	390	390	410
10000	420	400	420	310	440	340	340	380	490	520	—	—	—	540	—	—
25000	650	620	610	—	—	—	510	510	690	740	—	—	—	—	—	—
50000	900	850	740	—	—	—	650	450	750	840	—	—	—	—	—	—
75000	1060	1010	—	—	—	—	710	—	—	—	—	—	—	—	—	—
100000	1190	1120	—	—	—	—	690	—	—	—	—	—	—	—	—	—
150000	1350	1260	—	—	—	—	—	—	—	—	—	—	—	—	—	—
200000	1420	1320	—	—	—	—	—	—	—	—	—	—	—	—	—	—
250000	1420	1300	—	—	—	—	—	—	—	—	—	—	—	—	—	—
300000	1350	1200	—	—	—	—	—	—	—	—	—	—	—	—	—	—
400000	920	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

[1]Estimates not shown for groups with fewer than 20 respondents or when relatively large standard errors were associated with 90 percent or more of the subpopulation.
SOURCE: National Research Council

Table A-3. Listing of a and b parameters for selected science and engineering fields: 1985 Survey of Doctorate Recipients

	a	b
Total	−0.00003985	18.0554
Total scientists	−0.00003859	16.4004
Physical scientists	−0.00016339	19.1084
Mathematical scientists	−0.00042159	13.8816
Computer specialists	−0.00012426	20.7840
Environmental scientists	−0.00000937	11.7978
Life scientists	−0.00007564	12.3487
Psychologists	−0.00025944	17.0769
Social scientists	−0.00030801	26.6036
Total engineers	−0.00031461	29.8416
Aeronautical/astronautical	(1)	(1)
Chemical	−0.00040686	33.6294
Civil	0.00098256	31.9539
Electrical/electronics	−0.00029391	31.7871
Materials science	−0.00032891	32.1610
Mechanical	−0.00031410	35.3973

[1]Estimates of standard errors are not shown for groups with fewer than 20 respondents or when relatively large standard errors were associated with estimates of even 90 percent or more of the group.

SOURCE: National Research Council

Table A-4. Approximate standard errors for estimated percents of doctoral scientists and engineers: 1985 Survey of Doctorate Recipients

Base number of percent	Estimated percent						
	1 or 99	2 or 98	5 or 95	10 or 90	15 or 85	25 or 75	50/50
50	6.0	8.4	13.1	18.0	21.5	26.0	30.0
100	4.2	5.9	9.3	12.7	15.2	18.4	21.2
200	3.0	4.2	6.5	9.0	10.7	13.0	15.0
500	1.9	2.7	4.1	5.7	6.8	8.2	9.5
700	1.6	2.2	3.5	4.8	5.7	7.0	8.0
1000	1.3	1.9	2.9	4.0	4.8	5.8	6.7
2500	.8	1.2	1.9	2.5	3.0	3.7	4.2
5000	.6	.8	1.3	1.8	2.1	2.6	3.0
10000	.4	.6	.9	1.3	1.5	1.8	2.1
25000	.3	.4	.6	.8	1.0	1.2	1.3
50000	.2	.3	.4	.6	.7	.8	1.0
75000	.2	.2	.3	.5	.6	.7	.8
100000	.1	.2	.3	.4	.5	.6	.7
150000	.1	.2	.2	.3	.4	.5	.5
200000	.1	.1	.2	.3	.3	.4	.5
250000	.1	.1	.2	.3	.3	.4	.4
300000	.1	.1	.2	.2	.3	.3	.4
400000	.1	.1	.1	.2	.2	.3	.3

SOURCE: National Research Council

appendix b

detailed statistical tables

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TABLE B-1. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SEX: 1975-85

FIELD	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	255,900	285,100	314,300	344,000	369,300	400,400
MEN	233,900	257,500	280,900	303,000	320,500	341,900
WOMEN	22,100	27,600	33,400	41,000	48,800	58,500
SCIENTISTS						
TOTAL EMPLOYED	213,500	240,000	263,900	286,900	307,800	334,500
MEN	191,700	212,700	231,000	246,700	260,000	277,500
WOMEN	21,800	27,300	32,900	40,200	47,800	57,000
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	54,600	57,500	60,200	63,100	64,000	67,500
MEN	52,100	54,600	57,100	59,300	59,800	62,800
WOMEN	2,500	2,900	3,100	3,800	4,200	4,700
CHEMISTS						
TOTAL EMPLOYED	35,800	37,400	39,700	41,900	41,300	43,700
MEN	33,800	35,000	37,100	38,800	37,800	39,900
WOMEN	2,100	2,400	2,600	3,200	3,500	3,800
PHYSICISTS/ASTRONOMERS						
TOTAL EMPLOYED	18,800	20,100	20,600	21,200	22,700	23,700
MEN	18,300	19,600	20,000	20,600	22,000	22,900
WOMEN	500	600	600	600	700	900
MATHEMATICAL SCIENTISTS						
TOTAL EMPLOYED	13,600	14,600	15,300	15,600	16,400	16,800
MEN	12,700	13,600	14,100	14,300	15,000	15,200
WOMEN	900	1,000	1,100	1,300	1,400	1,600
MATHEMATICIANS						
TOTAL EMPLOYED	11,900	12,800	12,800	13,000	13,600	14,000
MEN	11,000	11,900	11,900	12,000	12,500	12,700
WOMEN	800	900	1,000	1,000	1,100	1,200
STATISTICIANS						
TOTAL EMPLOYED	1,700	1,800	2,400	2,500	2,800	2,800
MEN	1,700	1,600	2,200	2,300	2,500	2,500
WOMEN	100	100	200	300	300	300
COMPUTER/INFORMATION SPECIALISTS						
TOTAL EMPLOYED	3,500	5,800	6,700	9,100	12,200	15,000
MEN	3,400	5,500	6,300	8,400	10,900	13,300
WOMEN	100	200	400	700	1,300	1,600
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	12,100	13,000	14,600	15,900	16,500	17,300
MEN	11,800	12,600	14,000	15,100	15,600	16,200
WOMEN	300	400	600	900	900	1,100
EARTH SCIENTISTS						
TOTAL EMPLOYED	9,500	9,700	11,100	12,000	12,500	13,200
MEN	9,300	9,400	10,700	11,400	11,900	12,400
WOMEN	200	300	400	600	600	800
OCEANOGRAPHERS						
TOTAL EMPLOYED	1,300	1,600	1,700	1,800	1,700	2,000
MEN	1,200	1,500	1,500	1,600	1,600	1,700
WOMEN	100	100	200	200	200	200
ATMOSPHERIC SCIENTISTS						
TOTAL EMPLOYED	1,300	1,700	1,800	2,100	2,200	2,100
MEN	1,300	1,700	1,800	2,000	2,100	2,000
WOMEN	*	100	*	100	100	100
LIFE SCIENTISTS						
TOTAL EMPLOYED	63,300	70,500	78,900	84,900	92,800	101,800
MEN	55,800	61,400	67,500	71,600	76,600	82,100
WOMEN	7,500	9,100	11,300	13,300	16,200	19,700
BIOLOGICAL SCIENTISTS						
TOTAL EMPLOYED	39,000	42,100	45,600	49,600	55,200	59,900
MEN	33,300	35,400	37,700	40,600	44,600	47,200
WOMEN	5,800	6,700	7,900	9,000	10,600	12,600
AGRICULTURAL SCIENTISTS						
TOTAL EMPLOYED	11,000	12,100	12,800	13,500	14,500	15,500
MEN	10,800	11,900	12,500	13,100	13,900	14,700
WOMEN	100	200	300	400	700	800
MEDICAL SCIENTISTS						
TOTAL EMPLOYED	13,300	16,400	20,500	21,800	23,100	26,500
MEN	11,700	14,200	17,300	17,800	18,100	20,200
WOMEN	1,600	2,200	3,200	3,900	4,900	6,200
PSYCHOLOGISTS						
TOTAL EMPLOYED	30,000	33,700	37,800	42,800	46,600	52,200
MEN	23,700	26,100	28,700	31,100	33,000	35,600
WOMEN	6,300	7,600	9,200	11,700	13,700	16,600
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	36,300	44,900	50,500	55,500	59,300	64,000
MEN	32,200	39,000	43,300	47,000	49,300	52,200
WOMEN	4,100	6,000	7,100	8,600	10,100	11,800
ECONOMISTS						
TOTAL EMPLOYED	11,800	13,000	14,000	16,000	17,000	17,900
MEN	11,200	12,200	13,000	14,800	15,500	16,200
WOMEN	600	800	1,000	1,200	1,400	1,700
SOCIOLOGISTS/ANTHRO.						
TOTAL EMPLOYED	7,900	9,500	10,200	11,000	12,100	12,700
MEN	6,300	7,200	7,600	8,100	8,600	9,100
WOMEN	1,700	2,300	2,600	2,900	3,500	3,600

* TOO FEW CASES TO ESTIMATE

TABLE B-1. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SEX: 1975-85
CONTINUED

FIELD	1975	1977	1979	1981	1983	1985
OTHER SOCIAL SCIENTISTS						
TOTAL EMPLOYED	16,600	22,500	26,300	28,500	30,300	33,400
MEN	14,800	19,600	22,700	24,100	25,200	27,000
WOMEN	1,800	2,900	3,600	4,400	5,100	6,400
ENGINEERS						
TOTAL EMPLOYED	42,400	45,100	50,300	57,000	61,300	65,900
MEN	42,200	44,800	49,800	56,300	60,500	64,400
WOMEN	200	300	500	800	1,100	1,500
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	2,000	2,000	2,400	2,500	3,700	3,800
MEN	2,000	2,000	2,300	2,500	3,600	3,700
WOMEN	*	*	*	*	100	100
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	5,400	5,600	6,200	7,100	7,000	7,100
MEN	5,300	5,600	6,100	7,100	6,900	7,000
WOMEN	*	*	*	100	100	100
CIVIL ENGINEERS						
TOTAL EMPLOYED	3,800	4,100	5,200	6,100	5,300	6,400
MEN	3,800	4,100	5,100	6,000	5,200	6,300
WOMEN	*	*	100	100	100	100
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	8,500	8,300	8,600	10,600	12,700	14,200
MEN	8,500	8,200	8,500	10,500	12,500	13,900
WOMEN	*	*	100	100	200	300
MATERIALS SCI. ENGINEERS						
TOTAL EMPLOYED	4,800	5,200	5,700	6,100	7,400	7,300
MEN	4,700	5,200	5,700	6,000	7,300	7,000
WOMEN	*	*	100	100	200	200
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	4,000	4,600	5,200	5,400	5,700	6,600
MEN	4,000	4,600	5,200	5,300	5,600	6,500
WOMEN	*	*	*	*	100	100
NUCLEAR ENGINEERS						
TOTAL EMPLOYED	1,700	1,800	2,300	2,100	2,300	2,400
MEN	1,700	1,800	2,300	2,000	2,300	2,300
WOMEN	*	*	*	*	*	*
SYSTEMS DESIGN ENGINEERS						
TOTAL EMPLOYED	2,400	3,600	4,900	5,300	3,900	3,700
MEN	2,400	3,500	4,800	5,200	3,800	3,500
WOMEN	*	*	100	100	100	200
OTHER ENGINEERS						
TOTAL EMPLOYED	9,800	9,900	9,900	11,800	13,600	14,300
MEN	9,800	9,800	9,700	11,600	13,300	14,000
WOMEN	100	100	100	200	300	400

* TOO FEW CASES TO ESTIMATE

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-2. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND RACE/ETHNIC GROUP: 1975-85

FIELD AND RACE/ETHNIC GROUP(1)	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	255,900	285,100	314,300	344,000	369,300	400,400
WHITE	232,800	258,300	285,000	309,100	329,900	355,100
BLACK	2,500	2,700	3,200	4,200	5,000	5,700
NATIVE AMERICAN	200	200	400	400	400	500
ASIAN/PACIFIC ISLANDER	13,600	16,300	22,900	27,400	29,900	34,500
HISPANIC	2,000	2,700	4,100	4,800	5,400	5,900
SCIENTISTS						
TOTAL EMPLOYED	213,500	240,000	263,900	286,900	307,800	334,500
WHITE	195,800	219,600	243,000	261,900	280,000	302,500
BLACK	2,400	2,600	3,100	4,000	4,500	5,200
NATIVE AMERICAN	200	200	400	400	400	400
ASIAN/PACIFIC ISLANDER	9,300	11,200	15,000	18,300	19,300	22,700
HISPANIC	1,700	2,300	3,400	4,100	4,500	5,100
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	54,600	57,500	60,200	63,100	64,000	67,500
WHITE	49,800	52,000	54,600	56,200	56,800	59,600
BLACK	500	500	400	600	700	500
NATIVE AMERICAN	*	*	100	*	100	100
ASIAN/PACIFIC ISLANDER	3,000	3,400	4,700	5,800	5,700	6,600
HISPANIC	400	500	900	900	900	900
CHEMISTS						
TOTAL EMPLOYED	35,800	37,400	39,700	41,900	41,300	43,700
WHITE	32,700	33,900	35,800	37,300	36,500	38,500
BLACK	400	400	300	400	400	400
NATIVE AMERICAN	*	*	100	*	*	*
ASIAN/PACIFIC ISLANDER	1,900	2,200	3,200	3,900	3,900	4,300
HISPANIC	300	300	600	600	700	700
PHYSICISTS/ASTRONOMERS						
TOTAL EMPLOYED	18,800	20,100	20,600	21,200	22,700	23,700
WHITE	17,100	18,100	18,800	18,900	20,300	21,100
BLACK	100	100	100	200	200	100
NATIVE AMERICAN	*	*	100	*	*	*
ASIAN/PACIFIC ISLANDER	1,100	1,200	1,500	1,900	1,800	2,200
HISPANIC	100	200	300	300	200	300
MATHEMATICAL SCIENTISTS						
TOTAL EMPLOYED	13,600	14,600	15,300	15,600	16,400	16,800
WHITE	12,300	13,200	13,700	14,000	14,600	14,900
BLACK	100	100	100	200	200	200
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	700	800	1,100	1,200	1,400	1,400
HISPANIC	100	200	200	200	200	300
MATHEMATICIANS						
TOTAL EMPLOYED	11,900	12,800	12,800	13,000	13,600	14,000
WHITE	10,700	11,600	11,700	11,800	12,300	12,500
BLACK	100	100	100	200	200	100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	700	700	800	900	1,000	1,000
HISPANIC	100	100	200	200	200	300
STATISTICIANS						
TOTAL EMPLOYED	1,700	1,800	2,400	2,500	2,800	2,800
WHITE	1,600	1,600	2,000	2,200	2,300	2,400
BLACK	*	*	*	*	*	*
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	100	100	300	300	400	300
HISPANIC	*	*	*	*	*	*
COMPUTER/INFORMATION SPECIALISTS						
TOTAL EMPLOYED	3,500	5,800	6,700	9,100	12,200	15,000
WHITE	3,200	5,000	6,100	8,100	11,000	13,100
BLACK	*	*	*	*	*	100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	200	600	600	900	900	1,600
HISPANIC	*	*	100	100	200	200
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	12,100	13,000	14,600	15,900	16,500	17,300
WHITE	11,400	12,100	13,800	15,000	15,500	15,800
BLACK	*	*	100	*	*	100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	300	600	500	700	800	1,100
HISPANIC	100	100	200	200	200	300
EARTH SCIENTISTS						
TOTAL EMPLOYED	9,500	9,700	11,100	12,000	12,500	13,200
WHITE	9,000	9,100	10,500	11,300	11,800	12,000
BLACK	*	*	100	*	*	100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	200	400	400	500	600	900
HISPANIC	100	100	100	100	200	100
OCEANOGRAPHERS						
TOTAL EMPLOYED	1,300	1,600	1,700	1,800	1,700	2,000
WHITE	1,200	1,400	1,600	1,700	1,700	1,800
BLACK	*	*	*	*	*	*
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	*	100	100	100	100	100
HISPANIC	*	*	100	100	*	100
ATMOSPHERIC SCIENTISTS						
TOTAL EMPLOYED	1,300	1,700	1,800	2,100	2,200	2,100
WHITE	1,200	1,600	1,700	2,000	2,100	1,900
BLACK	*	*	*	*	*	*
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	100	100	100	100	100	100
HISPANIC	*	*	*	*	*	100

(1)HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* TOO FEW CASES TO ESTIMATE

TABLE B-2. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND RACE/ETHNIC GROUP: CONTINUED 1975-85

FIELD AND RACE/ETHNIC GROUP(1)	1975	1977	1979	1981	1983	1985
LIFE SCIENTISTS						
TOTAL EMPLOYED	63,300	70,500	78,900	84,900	92,800	101,800
WHITE	57,700	64,200	71,900	77,100	83,700	92,000
BLACK	700	800	900	1,000	1,100	1,400
NATIVE AMERICAN	100	100	100	100	100	100
ASIAN/PACIFIC ISLANDER	3,400	4,000	5,400	6,300	6,800	7,400
HISPANIC	600	700	1,000	1,200	1,300	1,400
BIOLOGICAL SCIENTISTS						
TOTAL EMPLOYED	39,000	42,100	45,600	49,600	55,200	59,900
WHITE	35,500	38,200	41,300	44,800	49,700	53,900
BLACK	600	500	600	600	600	800
NATIVE AMERICAN	*	*	*	*	*	100
ASIAN/PACIFIC ISLANDER	2,000	2,400	3,300	4,000	4,200	4,700
HISPANIC	400	400	600	700	700	800
AGRICULTURAL SCIENTISTS						
TOTAL EMPLOYED	11,000	12,100	12,800	13,500	14,500	15,500
WHITE	10,300	11,300	11,900	12,700	13,500	14,400
BLACK	*	100	100	100	100	100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	400	500	800	700	800	900
HISPANIC	100	100	200	200	300	200
MEDICAL SCIENTISTS						
TOTAL EMPLOYED	13,300	16,400	20,500	21,800	23,100	26,500
WHITE	12,000	14,700	18,600	19,600	20,600	23,700
BLACK	100	200	300	300	400	500
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	900	1,100	1,400	1,600	1,700	1,900
HISPANIC	200	200	200	300	300	400
PSYCHOLOGISTS						
TOTAL EMPLOYED	30,000	33,700	37,800	42,800	46,600	52,200
WHITE	28,300	31,900	36,500	41,000	44,500	49,500
BLACK	400	500	600	800	1,000	1,200
NATIVE AMERICAN	*	100	100	100	100	100
ASIAN/PACIFIC ISLANDER	300	300	400	600	700	800
HISPANIC	200	300	500	600	700	1,000
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	36,300	44,900	50,500	55,500	59,300	64,000
WHITE	33,100	41,100	46,400	50,500	53,800	57,700
BLACK	600	700	1,000	1,300	1,500	1,700
NATIVE AMERICAN	100	100	100	100	100	100
ASIAN/PACIFIC ISLANDER	1,400	1,500	2,300	3,000	3,100	3,800
HISPANIC	300	500	600	800	1,000	1,100
ECONOMISTS						
TOTAL EMPLOYED	11,800	13,000	14,000	16,000	17,000	17,900
WHITE	10,800	11,800	12,800	14,400	15,100	15,800
BLACK	100	100	300	200	300	300
NATIVE AMERICAN	*	*	100	100	100	100
ASIAN/PACIFIC ISLANDER	500	600	800	1,200	1,300	1,500
HISPANIC	100	200	200	300	300	400
SOCIOLOGISTS/ANTHRO.						
TOTAL EMPLOYED	7,900	9,500	10,200	11,000	12,100	12,700
WHITE	7,200	8,700	9,500	10,200	11,100	11,700
BLACK	100	100	200	300	400	300
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	200	300	300	300	400	500
HISPANIC	100	100	200	200	200	200
OTHER SOCIAL SCIENTISTS						
TOTAL EMPLOYED	16,600	22,500	26,300	28,500	30,300	33,400
WHITE	15,100	20,700	24,100	25,900	27,700	30,100
BLACK	300	400	600	800	800	1,100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	600	600	1,200	1,400	1,400	1,800
HISPANIC	100	200	200	300	500	500
ENGINEERS						
TOTAL EMPLOYED	42,400	45,100	50,300	57,000	61,500	65,900
WHITE	36,900	38,600	42,000	47,200	49,900	52,600
BLACK	100	100	100	300	400	500
NATIVE AMERICAN	*	*	*	*	*	100
ASIAN/PACIFIC ISLANDER	4,300	5,000	7,900	9,000	10,500	11,900
HISPANIC	300	400	600	800	1,000	800
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	2,000	2,000	2,400	2,500	3,700	3,800
WHITE	1,800	1,800	2,100	2,200	3,100	3,300
BLACK	*	*	*	*	*	*
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	200	100	200	300	500	500
HISPANIC	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	5,400	5,600	6,200	7,100	7,000	7,100
WHITE	4,700	4,700	5,000	5,600	5,400	5,100
BLACK	*	*	*	*	*	100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	500	700	1,200	1,600	1,500	1,900
HISPANIC	*	100	100	*	100	100
CIVIL ENGINEERS						
TOTAL EMPLOYED	3,800	4,100	5,200	6,100	5,300	6,400
WHITE	3,100	3,300	3,900	4,800	4,200	5,100
BLACK	*	*	*	*	*	100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	600	700	1,200	1,200	1,100	1,200
HISPANIC	100	*	*	100	100	100

(1)HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* TOO FEW CASES TO ESTIMATE

TABLE B-2. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND RACE/ETHNIC GROUP: CONTINUED 1975-85

FIELD AND RACE/ETHNIC GROUP(1)	1975	1977	1979	1981	1983	1985
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	8,500	8,300	8,600	10,600	12,700	14,200
WHITE	7,300	7,200	7,300	8,900	10,300	11,400
BLACK	*	*	*	*	100	100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	900	800	1,300	1,600	2,100	2,600
HISPANIC	100	100	100	100	200	200
MATERIALS SCI. ENGINEERS						
TOTAL EMPLOYED	4,800	5,200	5,700	6,100	7,400	7,300
WHITE	4,300	4,600	4,800	5,100	6,100	5,700
BLACK	*	*	*	*	*	*
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	400	600	800	800	1,200	1,500
HISPANIC	*	100	100	200	200	100
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	4,000	4,600	5,200	5,400	5,700	6,600
WHITE	3,400	3,800	4,100	4,300	4,400	5,100
BLACK	*	*	*	*	100	100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	600	800	1,200	1,000	1,200	1,400
HISPANIC	*	*	100	*	100	100
NUCLEAR ENGINEERS						
TOTAL EMPLOYED	1,700	1,800	2,300	2,100	2,300	2,400
WHITE	1,500	1,500	2,000	1,600	1,900	1,800
BLACK	*	*	*	*	*	*
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	100	200	200	400	400	500
HISPANIC	*	*	*	*	*	*
SYSTEMS DESIGN ENGINEERS						
TOTAL EMPLOYED	2,400	3,600	4,900	5,300	3,900	3,700
WHITE	2,100	3,200	4,300	4,800	3,500	3,200
BLACK	*	*	*	*	*	*
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	200	300	600	500	300	400
HISPANIC	*	*	*	100	100	200
OTHER ENGINEERS						
TOTAL EMPLOYED	9,800	9,900	9,900	11,800	13,600	14,300
WHITE	8,700	8,600	8,600	9,900	10,900	11,900
BLACK	*	*	*	100	100	100
NATIVE AMERICAN	*	*	*	*	*	*
ASIAN/PACIFIC ISLANDER	800	800	1,200	1,700	2,300	2,000
HISPANIC	*	100	300	200	200	100

(1)HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-3. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, AGE, AND PRIMARY WORK ACTIVITY: 1975 AND 1985

FIELD AND PRIMARY WORK ACTIVITY	1975 TOTAL	1975 UNDER 35	1975 UNDER 40	1975 UNDER 50	1975 UNDER 55	1975 55 OR OVER	1985 TOTAL	1985 UNDER 35	1985 UNDER 40	1985 UNDER 50	1985 UNDER 55	1985 55 OR OVER
ALL FIELDS												
TOTAL EMPLOYED	255,900	64,700	118,200	191,900	220,600	35,100	400,400	54,500	132,800	281,500	325,000	75,200
RESEARCH & DEVELOPMENT	82,400	29,500	49,000	69,100	75,500	6,800	132,500	29,800	60,400	104,200	115,100	17,400
BASIC RESEARCH	38,100	14,600	23,500	32,200	35,000	3,200	61,500	16,300	30,400	49,300	54,000	7,300
APPLIED RESEARCH	32,900	10,600	18,300	27,100	30,100	2,800	49,100	10,100	21,600	37,700	41,700	7,400
DEVELOPMENT	11,300	4,300	7,200	9,700	10,500	800	22,000	3,300	8,500	17,200	19,400	2,600
MANAGEMENT/ADMIN	51,700	6,500	15,600	33,700	42,400	9,300	69,600	3,000	13,700	46,000	55,500	14,200
OF R&D	28,700	3,900	9,200	19,200	23,800	4,800	34,900	2,100	8,600	24,700	29,000	5,900
GENERAL	23,100	2,600	6,400	14,400	18,600	4,500	34,700	900	5,200	21,300	26,400	8,300
TEACHING	91,100	21,000	40,500	68,300	78,300	12,800	111,700	10,300	28,800	70,300	84,800	26,800
CONSULTING	5,500	1,100	2,100	3,400	4,000	1,500	14,200	1,300	3,800	8,900	10,500	3,700
SALES	1,300	400	700	1,000	1,200	200	4,900	300	1,400	3,700	4,100	800
PROF. SERVICES	10,300	3,100	4,800	7,400	8,600	1,700	31,600	4,900	12,500	23,600	26,600	5,000
PROD. & RELATED ACT.	1,900	600	1,000	1,400	1,600	300	8,500	700	2,600	6,100	7,000	1,400
SCIENTISTS												
TOTAL EMPLOYED	213,500	53,700	96,700	158,000	182,100	31,200	334,500	46,600	112,700	235,400	270,300	64,100
RESEARCH & DEVELOPMENT	65,900	22,900	38,000	54,300	59,800	6,100	106,700	24,800	49,600	84,400	92,500	14,200
BASIC RESEARCH	36,500	13,900	22,400	30,800	33,400	3,100	57,800	15,200	28,400	46,500	50,800	7,000
APPLIED RESEARCH	24,900	7,400	13,000	19,900	22,300	2,600	37,700	7,700	16,400	28,700	31,700	6,100
DEVELOPMENT	4,500	1,700	2,600	3,700	4,000	500	11,200	1,900	4,800	9,300	10,100	1,100
MANAGEMENT/ADMIN	39,100	4,600	10,800	24,600	31,200	7,800	53,200	2,300	10,600	34,900	42,000	11,300
OF R&D	20,700	2,600	5,900	13,300	16,700	4,000	24,000	1,500	5,900	16,700	19,500	4,500
GENERAL	18,400	1,900	4,800	11,300	14,500	3,900	29,200	900	4,700	18,300	22,500	6,700
TEACHING	81,800	19,500	36,700	61,200	70,100	11,600	99,200	9,000	25,700	62,600	75,400	23,800
CONSULTING	3,800	700	1,400	2,300	2,700	1,100	10,500	1,100	3,000	6,700	7,600	2,800
SALES	1,100	300	600	800	1,000	100	3,500	300	1,100	2,700	2,900	600
PROF. SERVICES	10,200	3,100	4,700	7,300	8,400	1,700	30,700	4,900	12,300	23,100	25,800	4,900
PROD. & RELATED ACT.	1,400	400	600	1,000	1,200	200	6,500	600	2,000	4,500	5,300	1,200
PHYSICAL SCIENTISTS												
TOTAL EMPLOYED	54,600	13,800	25,500	41,000	46,800	7,700	67,500	10,400	21,000	45,800	53,400	14,100
RESEARCH & DEVELOPMENT	22,700	8,300	13,300	19,000	20,800	1,900	29,900	7,800	13,500	23,100	25,500	4,400
BASIC RESEARCH	10,900	4,600	7,100	9,400	10,100	800	14,300	4,100	6,800	11,200	12,400	1,900
APPLIED RESEARCH	9,700	3,100	5,100	8,000	8,900	800	11,900	3,000	5,200	8,900	9,900	2,000
DEVELOPMENT	2,100	600	1,100	1,700	1,800	300	3,600	700	1,500	3,000	3,200	500
MANAGEMENT/ADMIN	12,200	1,400	3,400	7,500	9,500	2,700	13,000	400	2,200	8,100	9,900	3,100
OF R&D	8,500	1,000	2,400	5,400	6,800	1,700	9,400	300	2,000	6,200	7,300	2,000
GENERAL	3,700	400	1,000	2,200	2,700	1,000	3,600	*	200	1,900	2,500	1,100
TEACHING	15,500	3,200	7,100	11,900	13,300	2,100	15,200	900	2,700	8,800	11,100	4,100
CONSULTING	400	*	100	100	200	200	1,200	*	100	400	500	700
SALES	600	100	300	400	500	100	1,300	100	300	900	1,100	200
PROF. SERVICES	400	100	200	200	300	100	700	100	200	500	600	200
PROD. & RELATED ACT.	700	200	400	500	600	100	2,300	300	700	1,500	1,800	500
MATH SCIENTISTS												
TOTAL EMPLOYED	13,600	4,400	7,700	11,100	12,200	1,400	16,800	2,100	4,900	11,800	13,800	2,900
RESEARCH & DEVELOPMENT	2,700	1,200	1,900	2,300	2,500	200	4,000	1,000	1,800	3,200	3,500	500
BASIC RESEARCH	1,600	700	1,100	1,400	1,500	100	2,300	600	1,100	1,900	2,100	300
APPLIED RESEARCH	800	300	500	700	700	100	1,100	200	400	900	1,000	100
DEVELOPMENT	300	200	300	300	300	*	600	100	300	500	500	100
MANAGEMENT/ADMIN	1,200	200	400	800	1,000	200	1,700	*	200	1,200	1,500	200
OF R&D	400	100	200	300	300	100	400	*	100	300	300	100
GENERAL	800	100	300	500	700	100	1,300	*	100	900	1,200	100
TEACHING	9,100	2,900	5,100	7,500	8,200	900	9,400	900	2,500	6,100	7,400	2,000
CONSULTING	100	*	*	100	100	*	500	*	100	400	400	100
SALES	*	*	*	*	*	*	100	*	*	*	*	*
PROF. SERVICES	100	*	*	*	*	*	100	*	100	100	100	*
PROD. & RELATED ACT.	*	*	*	*	*	*	100	*	*	100	100	*
COMPUTER SPECIALISTS												
TOTAL EMPLOYED	3,500	1,300	2,100	3,100	3,300	200	15,000	2,300	6,200	12,600	13,700	1,300
RESEARCH & DEVELOPMENT	1,400	700	1,000	1,300	1,400	*	6,100	1,300	2,700	5,200	5,600	500
BASIC RESEARCH	200	100	100	200	200	*	1,000	400	500	900	900	100
APPLIED RESEARCH	400	200	300	300	400	*	1,000	300	600	900	900	*
DEVELOPMENT	800	400	600	700	800	*	4,100	500	1,600	3,400	3,800	300
MANAGEMENT/ADMIN	800	100	400	700	700	*	2,900	200	800	2,400	2,700	200
OF R&D	400	100	200	400	400	*	1,700	100	600	1,500	1,700	100
GENERAL	400	*	200	300	400	*	1,100	100	200	900	1,000	100
TEACHING	1,100	300	600	900	1,000	100	2,800	300	1,100	2,100	2,400	500
CONSULTING	100	*	*	100	100	*	900	200	500	800	900	*
SALES	*	*	*	*	*	*	300	*	100	300	300	*
PROF. SERVICES	100	*	*	*	*	*	200	*	100	100	100	*
PROD. & RELATED ACT.	*	*	*	*	*	*	700	*	300	600	600	100

* TOO FEW CASES TO ESTIMATE

TABLE B-3. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, AGE, AND PRIMARY WORK ACTIVITY: 1975 AND 1985
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975 TOTAL	1975 UNDER 35	1975 UNDER 40	1975 UNDER 50	1975 UNDER 55	1975 55 OR OVER	1985 TOTAL	1985 UNDER 35	1985 UNDER 40	1985 UNDER 50	1985 UNDER 55	1985 55 OR OVER
ENVIRONMENTAL SCIENTISTS												
TOTAL EMPLOYED	12,100	2,500	5,200	9,000	10,400	1,700	17,300	1,800	5,400	11,900	14,200	3,100
RESEARCH & DEVELOPMENT	4,600	1,300	2,600	3,800	4,200	400	6,800	1,100	2,900	5,300	5,900	1,000
BASIC RESEARCH	2,300	600	1,300	1,900	2,000	200	3,600	700	1,700	2,700	3,200	400
APPLIED RESEARCH	2,100	600	1,200	1,700	2,000	200	2,900	300	1,100	2,200	2,400	500
DEVELOPMENT	200	100	100	200	200	*	300	100	100	300	300	*
MANAGEMENT/ADMIN	2,800	300	700	1,800	2,300	500	3,500	100	600	2,200	2,900	600
OF R&D	1,500	200	400	1,000	1,200	300	2,100	100	400	1,400	1,800	300
GENERAL	1,300	100	300	800	1,100	200	1,400	*	200	800	1,100	300
TEACHING	3,500	600	1,400	2,600	3,000	500	3,400	300	900	2,100	2,600	700
CONSULTING	500	100	200	300	400	100	1,400	100	300	900	1,100	300
SALES	*	*	*	*	*	*	*	*	*	*	*	*
PROF. SERVICES	100	*	100	100	100	*	300	*	100	200	200	100
PROD. & RELATED ACT	*	*	*	*	*	*	500	*	100	300	400	100
LIFE SCIENTISTS												
TOTAL EMPLOYED	63,300	15,600	28,000	46,300	53,600	9,700	101,800	15,500	36,000	72,300	82,800	19,000
RESEARCH & DEVELOPMENT	25,700	8,500	14,200	20,700	23,000	2,600	44,600	10,500	21,200	35,200	38,700	5,900
BASIC RESEARCH	17,500	6,600	10,600	14,600	16,000	1,500	31,000	8,000	15,500	25,400	27,500	3,500
APPLIED RESEARCH	7,500	1,700	3,300	5,600	6,500	1,000	11,900	2,200	4,900	8,500	9,600	2,200
DEVELOPMENT	600	200	300	500	500	100	1,700	300	800	1,400	1,500	200
MANAGEMENT/ADMIN	10,600	1,100	2,600	6,400	8,400	2,300	15,700	800	2,900	9,600	11,800	3,900
OF R&D	6,200	700	1,600	3,900	4,900	1,300	7,300	500	1,800	4,800	5,700	1,600
GENERAL	4,400	400	1,100	2,600	3,500	1,000	8,300	200	1,100	4,800	6,100	2,300
TEACHING	19,900	4,200	8,100	14,300	16,600	3,300	22,400	1,700	5,500	13,700	16,900	5,600
CONSULTING	900	200	400	600	600	300	2,400	300	600	1,500	1,700	700
SALES	300	100	200	200	200	*	900	100	400	700	800	100
PROF. SERVICES	2,000	600	900	1,400	1,600	400	6,400	900	2,200	4,800	5,400	1,000
PROD. & RELATED ACT	600	100	200	400	500	100	1,900	100	500	1,400	1,600	300
PSYCHOLOGISTS												
TOTAL EMPLOYED	30,000	7,900	13,100	22,000	25,800	4,200	52,200	7,800	20,100	37,100	42,200	10,000
RESEARCH & DEVELOPMENT	3,400	1,200	2,000	2,900	3,100	300	5,200	1,100	2,600	4,300	4,500	700
BASIC RESEARCH	1,900	700	1,100	1,600	1,700	200	2,300	500	1,100	1,900	2,000	300
APPLIED RESEARCH	1,300	500	800	1,100	1,200	100	2,400	500	1,300	2,000	2,100	400
DEVELOPMENT	200	*	100	200	200	*	400	100	200	400	400	*
MANAGEMENT/ADMIN	5,500	800	1,600	3,800	4,700	800	6,200	400	2,000	4,100	4,900	1,300
OF R&D	1,800	300	600	1,200	1,600	200	1,000	100	400	700	900	200
GENERAL	3,700	500	1,000	2,600	3,100	600	5,200	300	1,600	3,300	4,100	1,100
TEACHING	11,300	3,300	5,300	8,600	9,900	1,400	13,200	1,500	4,200	8,500	10,100	3,100
CONSULTING	1,200	200	400	700	900	300	2,100	300	800	1,400	1,600	600
SALES	*	*	*	*	*	*	300	100	200	300	300	100
PROF. SERVICES	7,400	2,200	3,300	5,300	6,200	1,100	21,700	3,800	9,100	16,500	18,400	3,300
PROD. & RELATED ACT	*	*	*	*	*	*	400	*	100	300	300	100
SOCIAL SCIENTISTS												
TOTAL EMPLOYED	36,300	8,200	15,100	25,600	30,000	6,200	64,000	6,700	19,100	43,900	50,200	13,800
RESEARCH & DEVELOPMENT	5,400	1,700	3,000	4,400	4,800	600	10,100	2,000	4,800	8,200	8,800	1,300
BASIC RESEARCH	2,200	600	1,200	1,700	2,000	300	3,300	800	1,600	2,500	2,700	500
APPLIED RESEARCH	3,000	1,000	1,800	2,500	2,600	300	6,500	1,100	3,000	5,300	5,700	800
DEVELOPMENT	200	100	100	100	200	*	400	100	200	400	400	*
MANAGEMENT/ADMIN	5,900	600	1,600	3,500	4,600	1,300	10,400	400	2,000	7,300	8,400	2,000
OF R&D	1,900	300	600	1,200	1,500	400	2,100	200	700	1,700	1,800	300
GENERAL	4,000	300	900	2,400	3,100	1,000	8,300	200	1,300	5,600	6,600	1,700
TEACHING	21,400	5,000	9,100	15,500	18,100	3,400	32,800	3,400	9,000	21,300	24,800	7,900
CONSULTING	600	100	300	400	400	200	2,000	200	600	1,300	1,400	500
SALES	200	*	100	100	100	*	600	*	100	400	400	100
PROF. SERVICES	200	100	100	200	200	100	1,300	*	500	800	1,000	300
PROD. & RELATED ACT	100	*	*	*	*	*	600	*	200	400	500	200
ENGINEERS												
TOTAL EMPLOYED	42,400	11,000	21,500	33,900	38,500	4,000	65,900	8,000	20,000	46,100	54,700	11,100
RESEARCH & DEVELOPMENT	16,400	6,600	10,900	14,800	15,700	700	25,800	5,000	10,900	19,800	22,600	3,200
BASIC RESEARCH	1,600	700	1,000	1,500	1,500	100	3,600	1,100	2,000	2,800	3,300	300
APPLIED RESEARCH	8,000	3,300	5,400	7,300	7,700	300	11,400	2,500	5,100	9,000	10,000	1,400
DEVELOPMENT	6,800	2,600	4,600	6,000	6,500	400	10,800	1,400	3,700	8,000	9,300	1,500
MANAGEMENT/ADMIN	12,600	1,900	4,800	9,100	11,200	1,500	16,400	700	3,100	11,100	13,500	2,900
OF R&D	8,000	1,300	3,200	5,900	7,200	800	10,900	600	2,600	8,100	9,600	1,400
GENERAL	4,700	600	1,600	3,100	4,000	600	5,500	100	500	3,000	3,900	1,500
TEACHING	9,300	1,500	3,800	7,100	8,200	1,100	12,500	1,300	3,100	7,700	9,500	3,000
CONSULTING	1,700	400	700	1,100	1,300	400	3,700	300	800	2,200	2,800	900
SALES	200	100	100	200	200	*	1,400	*	400	1,000	1,200	200
PROF. SERVICES	200	*	100	100	100	*	900	*	200	500	700	200
PROD. & RELATED ACT	400	200	300	400	400	*	1,900	200	600	1,500	1,700	300

* TOO FEW CASES TO ESTIMATE

TABLE B-3. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, AGE, AND PRIMARY WORK ACTIVITY: 1975 AND 1985
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975 TOTAL	1975 UNDER 35	1975 UNDER 40	1975 UNDER 50	1975 UNDER 55	1975 55 OR OVER	1985 TOTAL	1985 UNDER 35	1985 UNDER 40	1985 UNDER 50	1985 UNDER 55	1985 55 OR OVER
AERO/ASTRO ENGINEERS												
TOTAL EMPLOYED	2,000	500	1,100	1,700	1,900	100	3,800	400	1,000	2,700	3,100	700
RESEARCH & DEVELOPMENT	1,000	400	700	900	1,000	*	1,900	400	700	1,300	1,600	300
BASIC RESEARCH	200	100	100	200	200	*	300	200	200	200	300	*
APPLIED RESEARCH	500	200	400	500	500	*	700	100	300	600	700	100
DEVELOPMENT	300	100	200	300	300	*	800	100	200	400	600	200
MANAGEMENT/ADMIN	600	100	300	500	600	100	1,100	*	100	800	900	200
OF R&D	500	100	200	400	400	*	900	*	100	700	800	100
GENERAL	200	*	100	100	200	*	200	*	*	100	100	*
TEACHING	300	*	100	200	300	*	300	*	*	200	200	200
CONSULTING	*	*	*	*	*	*	100	*	100	100	100	*
SALES	*	*	*	*	*	*	*	*	*	*	*	*
PROF. SERVICES	*	*	*	*	*	*	100	*	*	100	100	*
PROD. & RELATED ACT	*	*	*	*	*	*	*	*	*	*	*	*
CHEMICAL ENGINEERS												
TOTAL EMPLOYED	5,400	1,400	2,700	4,100	4,700	700	7,100	1,200	2,700	5,300	6,200	1,000
RESEARCH & DEVELOPMENT	2,000	900	1,400	1,800	1,900	100	3,200	800	1,600	2,500	2,700	400
BASIC RESEARCH	100	100	100	100	100	*	400	200	300	400	400	100
APPLIED RESEARCH	900	400	600	900	900	*	1,500	500	900	1,300	1,400	100
DEVELOPMENT	1,000	400	600	800	900	100	1,200	100	400	800	900	300
MANAGEMENT/ADMIN	1,900	300	700	1,300	1,600	300	1,800	100	400	1,300	1,600	200
OF R&D	1,000	200	400	700	900	100	1,200	100	400	1,100	1,200	*
GENERAL	900	100	300	600	700	200	500	*	*	300	400	100
TEACHING	800	100	400	700	700	100	900	100	300	600	800	100
CONSULTING	200	*	100	100	100	100	200	*	*	100	200	*
SALES	100	*	*	100	100	*	200	*	*	100	200	100
PROF. SERVICES	*	*	*	*	*	*	200	*	100	100	200	*
PROD. & RELATED ACT	100	*	100	100	100	*	300	*	*	200	200	100
CIVIL ENGINEERS												
TOTAL EMPLOYED	3,800	800	1,900	3,100	3,400	300	6,400	900	2,000	4,600	5,300	1,000
RESEARCH & DEVELOPMENT	700	200	400	600	700	*	1,400	500	700	1,100	1,200	200
BASIC RESEARCH	100	*	*	100	100	*	300	200	200	300	300	*
APPLIED RESEARCH	300	100	200	300	300	*	500	100	200	400	500	100
DEVELOPMENT	300	100	200	300	300	*	500	200	300	400	400	100
MANAGEMENT/ADMIN	900	200	300	700	800	100	1,100	*	200	800	900	200
OF R&D	400	100	200	300	300	100	500	*	200	400	500	*
GENERAL	600	100	200	400	500	100	700	*	*	400	400	200
TEACHING	1,400	200	600	1,100	1,300	200	2,200	300	700	1,600	1,800	400
CONSULTING	400	100	300	400	400	*	800	100	100	400	600	200
SALES	*	*	*	*	*	*	100	*	100	100	100	*
PROF. SERVICES	*	*	*	*	*	*	200	*	*	200	200	*
PROD. & RELATED ACT	*	*	*	*	*	*	300	*	100	200	300	*
ELEC./ELECTRON. ENGINEERS												
TOTAL EMPLOYED	8,500	2,500	4,700	7,100	8,000	600	14,200	1,800	4,400	10,600	12,100	2,100
RESEARCH & DEVELOPMENT	3,700	1,700	2,700	3,400	3,600	100	5,300	1,000	2,300	4,300	4,700	600
BASIC RESEARCH	200	100	200	200	200	*	500	200	300	400	500	*
APPLIED RESEARCH	1,500	700	1,100	1,400	1,400	*	1,900	300	800	1,500	1,600	200
DEVELOPMENT	2,000	900	1,500	1,900	2,000	*	2,900	500	1,200	2,400	2,600	400
MANAGEMENT/ADMIN	2,200	400	900	1,700	2,000	200	4,200	200	900	3,100	3,700	500
OF R&D	1,600	300	600	1,200	1,400	100	2,900	200	600	2,300	2,600	300
GENERAL	700	100	300	500	600	*	1,300	*	200	800	1,100	200
TEACHING	2,200	400	900	1,700	1,900	200	3,000	500	900	1,900	2,300	700
CONSULTING	100	*	*	100	100	*	400	*	100	300	300	100
SALES	*	*	*	*	*	*	400	*	100	400	400	*
PROF. SERVICES	*	*	*	*	*	*	100	*	*	100	100	*
PROD. & RELATED ACT	*	*	*	*	*	*	300	100	100	300	300	*
MECHANICAL ENGINEERS												
TOTAL EMPLOYED	4,000	1,100	2,300	3,400	3,700	300	6,600	600	1,800	4,300	5,600	1,000
RESEARCH & DEVELOPMENT	1,500	700	1,100	1,400	1,500	100	2,500	500	1,000	2,000	2,400	100
BASIC RESEARCH	100	100	100	100	100	*	400	200	300	300	400	*
APPLIED RESEARCH	800	400	500	700	800	*	800	200	300	700	800	100
DEVELOPMENT	600	300	400	600	600	*	1,300	100	400	1,000	1,200	*
MANAGEMENT/ADMIN	1,000	200	600	900	900	100	1,400	*	200	700	1,000	400
OF R&D	600	200	400	600	600	100	900	*	200	400	800	100
GENERAL	400	*	200	300	300	*	500	*	*	200	300	200
TEACHING	1,300	200	500	1,000	1,100	100	2,000	200	600	1,300	1,600	400
CONSULTING	100	*	100	100	100	*	300	*	100	200	300	*
SALES	*	*	*	*	*	*	*	*	*	*	*	*
PROF. SERVICES	*	*	*	*	*	*	100	*	*	*	*	*
PROD. & RELATED ACT	*	*	*	*	*	*	100	*	*	100	100	*

* TOO FEW CASES TO ESTIMATE

TABLE B-3. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, AGE, AND PRIMARY WORK ACTIVITY: 1975 AND 1985
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975 TOTAL	1975 UNDER 35	1975 UNDER 40	1975 UNDER 50	1975 UNDER 55	1975 55 OR OVER	1985 TOTAL	1985 UNDER 35	1985 UNDER 40	1985 UNDER 50	1985 UNDER 55	1985 55 OR OVER
OTHER ENGINEERS												
TOTAL EMPLOYED	18,700	4,500	8,800	14,400	16,800	1,900	27,700	3,000	8,200	18,700	22,400	5,300
RESEARCH & DEVELOPMENT	7,500	2,800	4,700	6,600	7,100	400	11,700	1,900	4,600	8,700	10,100	1,600
BASIC RESEARCH	900	400	500	800	900	*	1,700	200	800	1,200	1,500	200
APPLIED RESEARCH	4,000	1,500	2,600	3,600	3,900	100	5,900	1,300	2,600	4,500	5,000	900
DEVELOPMENT	2,600	900	1,600	2,200	2,400	200	4,100	400	1,300	2,900	3,600	500
MANAGEMENT/ADMIN	5,900	800	2,000	4,000	5,200	700	6,800	300	1,400	4,400	5,300	1,500
OF R&D	3,900	500	1,500	2,800	3,500	400	4,500	300	1,200	3,100	3,700	800
GENERAL	2,000	200	500	1,200	1,700	300	2,300	*	200	1,300	1,600	700
TEACHING	3,300	500	1,300	2,400	2,900	400	4,000	300	700	2,300	2,800	1,100
CONSULTING	800	200	300	500	600	200	1,800	200	400	1,000	1,300	500
SALES	100	100	100	100	100	*	600	*	200	400	500	100
PROF. SERVICES	*	*	*	*	*	*	200	*	*	100	200	100
PROD. & RELATED ACT	200	100	200	200	200	*	1,000	*	300	800	800	200

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-4. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	255,900	285,100	314,300	344,000	369,300	400,400
INDUSTRY, TOTAL	64,600	71,600	82,900	99,100	113,500	125,800
SELF-EMPLOYED	6,100	7,400	10,400	14,700	18,000	23,200
4 YR. COLL./UNIV.	143,600	157,100	167,400	179,200	187,600	202,000
HOSPITALS/CLINICS	7,500	8,600	9,700	9,900	10,400	11,400
NONPROFIT ORGS.	8,300	10,200	12,500	12,600	11,900	13,600
FEDERAL GOVT.	19,000	21,400	23,900	25,100	25,800	26,300
STATE/LOCAL GOVT.	4,900	5,300	6,100	6,600	7,700	8,200
SCIENTISTS						
TOTAL EMPLOYED	213,500	240,000	263,900	286,900	307,800	334,500
INDUSTRY, TOTAL	42,500	48,700	56,300	67,300	79,000	87,900
SELF-EMPLOYED	5,300	6,400	9,400	13,100	16,400	20,800
4 YR. COLL./UNIV.	128,800	141,400	150,500	161,200	167,300	180,500
HOSPITALS/CLINICS	7,500	8,600	9,700	9,900	10,400	11,300
NONPROFIT ORGS.	7,100	8,600	10,400	10,300	10,000	11,900
FEDERAL GOVT.	16,000	17,900	20,400	21,300	22,000	22,500
STATE/LOCAL GOVT.	4,500	4,900	5,900	6,200	7,300	7,900
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	54,600	57,500	60,200	63,100	64,000	67,500
INDUSTRY, TOTAL	22,100	23,000	25,000	27,400	28,700	30,300
SELF-EMPLOYED	600	500	900	1,100	800	1,200
4 YR. COLL./UNIV.	24,200	25,600	26,000	26,800	26,500	28,200
HOSPITALS/CLINICS	500	500	500	500	600	500
NONPROFIT ORGS.	1,900	2,000	2,000	2,100	1,800	2,300
FEDERAL GOVT.	3,700	3,900	4,600	4,300	4,300	4,000
STATE/LOCAL GOVT.	300	300	300	400	200	300
CHEMISTS						
TOTAL EMPLOYED	35,800	37,400	39,700	41,900	41,300	43,700
INDUSTRY, TOTAL	18,100	18,700	20,500	22,300	22,500	24,100
SELF-EMPLOYED	400	300	700	900	600	1,000
4 YR. COLL./UNIV.	13,200	13,700	14,200	14,500	13,900	15,000
HOSPITALS/CLINICS	400	400	400	400	400	400
NONPROFIT ORGS.	1,100	1,100	1,000	1,100	800	1,000
FEDERAL GOVT.	1,700	1,800	2,100	2,100	2,100	1,800
STATE/LOCAL GOVT.	200	200	100	300	200	300
PHYSICISTS/ASTRONOMERS						
TOTAL EMPLOYED	18,800	20,100	20,600	21,200	22,700	23,700
INDUSTRY, TOTAL	4,000	4,300	4,500	5,100	6,200	6,200
SELF-EMPLOYED	200	100	200	300	200	200
4 YR. COLL./UNIV.	11,000	11,800	11,800	12,300	12,500	13,200
HOSPITALS/CLINICS	100	100	100	100	200	200
NONPROFIT ORGS.	900	1,000	1,000	1,000	900	1,200
FEDERAL GOVT.	2,100	2,100	2,500	2,200	2,300	2,300
STATE/LOCAL GOVT.	*	*	100	100	100	*
MATHEMATICAL SCIENTISTS						
TOTAL EMPLOYED	13,600	14,600	15,300	15,600	16,400	16,800
INDUSTRY, TOTAL	1,000	1,300	1,500	1,600	2,000	1,900
SELF-EMPLOYED	100	100	200	200	200	200
4 YR. COLL./UNIV.	11,400	11,800	12,100	12,300	12,800	13,000
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	200	300	300	300	200	300
FEDERAL GOVT.	600	600	800	900	800	900
STATE/LOCAL GOVT.	*	100	100	*	*	*
MATHEMATICIANS						
TOTAL EMPLOYED	11,900	12,800	12,800	13,000	13,600	14,000
INDUSTRY, TOTAL	800	1,000	1,200	1,200	1,500	1,400
SELF-EMPLOYED	*	100	200	200	200	100
4 YR. COLL./UNIV.	10,100	10,500	10,300	10,600	10,900	11,100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	200	200	300	200	100	200
FEDERAL GOVT.	400	400	600	600	500	600
STATE/LOCAL GOVT.	*	*	*	*	*	*
STATISTICIANS						
TOTAL EMPLOYED	1,700	1,800	2,400	2,500	2,800	2,800
INDUSTRY, TOTAL	200	300	300	500	500	500
SELF-EMPLOYED	*	*	*	100	*	100
4 YR. COLL./UNIV.	1,300	1,200	1,800	1,700	1,900	1,900
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	100	100
FEDERAL GOVT.	200	200	200	300	300	300
STATE/LOCAL GOVT.	*	*	*	*	*	*
COMPUTER/INFORMATION SPECIALISTS						
TOTAL EMPLOYED	3,500	5,800	6,700	9,100	12,200	15,000
INDUSTRY, TOTAL	1,400	3,100	3,700	5,200	6,800	8,400
SELF-EMPLOYED	100	100	100	300	300	700
4 YR. COLL./UNIV.	1,700	2,100	2,400	3,000	3,900	5,100
HOSPITALS/CLINICS	*	*	*	*	100	*
NONPROFIT ORGS.	100	200	200	300	300	300
FEDERAL GOVT.	200	300	300	400	500	700
STATE/LOCAL GOVT.	*	100	*	200	300	200
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	12,100	13,000	14,600	15,900	16,500	17,300
INDUSTRY, TOTAL	2,900	3,100	4,200	4,700	5,200	5,300
SELF-EMPLOYED	300	200	400	500	600	700
4 YR. COLL./UNIV.	5,800	6,100	6,000	6,600	6,500	7,100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	500	500	600	600	600	700
FEDERAL GOVT.	2,200	2,400	2,700	3,100	3,100	3,300
STATE/LOCAL GOVT.	400	500	700	600	800	700

* TOO FEW CASES TO ESTIMATE

TABLE B-4. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85
CONTINUED

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
EARTH SCIENTISTS						
TOTAL EMPLOYED	9,500	9,700	11,100	12,000	12,500	13,200
INDUSTRY, TOTAL	2,700	2,700	3,800	4,100	4,600	4,800
SELF-EMPLOYED	300	200	300	500	500	600
4 YR. COLL./UNIV.	4,500	4,500	4,500	4,800	4,500	5,000
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	300	300	300	300	300	300
FEDERAL GOVT.	1,500	1,600	1,800	2,100	2,200	2,400
STATE/LOCAL GOVT.	300	400	500	500	700	600
OCEANOGRAPHERS						
TOTAL EMPLOYED	1,300	1,600	1,700	1,800	1,700	2,000
INDUSTRY, TOTAL	100	100	200	200	200	200
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	800	900	800	1,000	1,100	1,200
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	100	100	100	100	100	100
FEDERAL GOVT.	200	300	400	400	300	400
STATE/LOCAL GOVT.	*	100	100	100	100	*
ATMOSPHERIC SCIENTISTS						
TOTAL EMPLOYED	1,300	1,700	1,800	2,100	2,200	2,100
INDUSTRY, TOTAL	200	300	300	400	300	300
SELF-EMPLOYED	*	*	*	*	*	100
4 YR. COLL./UNIV.	600	700	700	800	900	1,000
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	100	200	200	200	200	200
FEDERAL GOVT.	400	500	500	600	700	500
STATE/LOCAL GOVT.	*	*	*	*	*	*
LIFE SCIENTISTS						
TOTAL EMPLOYED	63,300	70,500	78,900	84,900	92,800	101,800
INDUSTRY, TOTAL	8,700	9,700	11,100	13,100	16,400	19,200
SELF-EMPLOYED	1,200	1,300	1,900	2,500	3,100	3,600
4 YR. COLL./UNIV.	41,500	45,600	50,400	54,400	57,300	61,800
HOSPITALS/CLINICS	2,200	2,600	3,200	3,000	3,600	4,100
NONPROFIT ORGS.	1,800	2,400	3,000	3,200	3,300	3,900
FEDERAL GOVT.	5,900	6,400	7,200	7,200	7,800	8,000
STATE/LOCAL GOVT.	1,400	1,500	1,600	1,700	1,700	2,200
BIOLOGICAL SCIENTISTS						
TOTAL EMPLOYED	39,000	42,100	45,600	49,600	55,200	59,900
INDUSTRY, TOTAL	3,500	4,000	4,300	5,300	7,700	9,300
SELF-EMPLOYED	300	300	300	700	800	900
4 YR. COLL./UNIV.	28,000	29,800	32,000	34,700	36,800	39,200
HOSPITALS/CLINICS	1,000	1,100	1,200	1,200	1,300	1,100
NONPROFIT ORGS.	1,400	1,700	2,100	2,300	2,300	2,800
FEDERAL GOVT.	3,400	3,400	3,900	4,100	4,600	4,800
STATE/LOCAL GOVT.	600	500	700	600	800	800
AGRICULTURAL SCIENTISTS						
TOTAL EMPLOYED	11,000	12,100	12,800	13,500	14,500	15,500
INDUSTRY, TOTAL	2,300	2,500	3,100	3,100	3,600	4,000
SELF-EMPLOYED	300	200	500	500	700	900
4 YR. COLL./UNIV.	6,500	6,900	6,800	7,500	8,000	8,500
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	100	100	200	300	300	300
FEDERAL GOVT.	1,700	2,100	2,100	2,100	2,000	2,100
STATE/LOCAL GOVT.	300	300	300	400	300	400
MEDICAL SCIENTISTS						
TOTAL EMPLOYED	13,300	16,400	20,500	21,800	23,100	26,500
INDUSTRY, TOTAL	2,800	3,200	3,800	4,700	5,100	5,800
SELF-EMPLOYED	600	700	1,000	1,400	1,500	1,800
4 YR. COLL./UNIV.	7,100	9,000	11,500	12,200	12,500	14,100
HOSPITALS/CLINICS	1,200	1,400	2,000	1,800	2,300	2,900
NONPROFIT ORGS.	400	600	700	600	600	800
FEDERAL GOVT.	800	900	1,100	1,000	1,100	1,100
STATE/LOCAL GOVT.	500	600	600	600	700	900
PSYCHOLOGISTS						
TOTAL EMPLOYED	30,000	33,700	37,800	42,800	46,600	52,200
INDUSTRY, TOTAL	4,100	5,500	7,100	10,100	13,000	15,500
SELF-EMPLOYED	2,700	3,600	5,200	7,100	9,500	12,000
4 YR. COLL./UNIV.	16,000	16,600	17,600	19,000	19,400	21,500
HOSPITALS/CLINICS	4,700	5,400	5,900	6,200	6,000	6,400
NONPROFIT ORGS.	1,100	1,300	1,700	1,700	1,800	2,100
FEDERAL GOVT.	1,000	1,200	1,100	1,200	1,200	1,000
STATE/LOCAL GOVT.	1,200	1,300	1,700	1,700	2,100	1,900
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	36,300	44,900	50,500	55,500	59,300	64,000
INDUSTRY, TOTAL	2,200	3,000	3,700	5,100	6,800	7,400
SELF-EMPLOYED	400	500	800	1,300	2,000	2,400
4 YR. COLL./UNIV.	28,200	33,600	36,100	39,100	41,000	43,800
HOSPITALS/CLINICS	100	100	*	100	200	300
NONPROFIT ORGS.	1,500	2,000	2,700	2,200	2,100	2,300
FEDERAL GOVT.	2,400	3,100	3,700	4,300	4,300	4,600
STATE/LOCAL GOVT.	1,100	1,200	1,700	1,700	2,100	2,500
ECONOMISTS						
TOTAL EMPLOYED	11,800	13,000	14,000	16,000	17,000	17,900
INDUSTRY, TOTAL	1,400	1,700	1,900	2,600	2,800	3,000
SELF-EMPLOYED	100	200	300	400	500	600
4 YR. COLL./UNIV.	8,100	8,700	9,000	10,400	11,300	11,600
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	400	500	700	400	200	400
FEDERAL GOVT.	1,300	1,400	1,600	1,600	1,700	1,700
STATE/LOCAL GOVT.	500	100	100	200	200	200

* TOO FEW CASES TO ESTIMATE

TABLE B-4. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85
CONTINUED

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
SOCIOLOGISTS/ANTHRO.						
TOTAL EMPLOYED	7,900	9,500	10,200	11,000	12,100	12,700
INDUSTRY, TOTAL	100	200	300	500	800	1,100
SELF-EMPLOYED	100	100	100	200	300	500
4 YR. COLL./UNIV.	7,200	8,300	8,600	9,000	9,800	10,000
HOSPITALS/CLINICS	*	*	*	100	*	100
NONPROFIT ORGS	300	400	600	500	400	600
FEDERAL GOVT	200	100	100	300	100	200
STATE/LOCAL GOVT	100	100	200	200	200	100
OTHER SOCIAL SCIENTISTS						
TOTAL EMPLOYED	16,600	22,500	26,300	28,500	30,300	33,400
INDUSTRY, TOTAL	700	1,000	1,600	2,100	3,200	3,300
SELF-EMPLOYED	200	300	500	700	1,200	1,300
4 YR. COLL./UNIV.	12,900	16,600	18,600	19,700	19,900	22,100
HOSPITALS/CLINICS	*	100	*	*	100	200
NONPROFIT ORGS	800	1,100	1,400	1,300	1,400	1,400
FEDERAL GOVT	900	1,600	1,900	2,300	2,500	2,700
STATE/LOCAL GOVT	600	900	1,400	1,300	1,600	2,200
ENGINEERS						
TOTAL EMPLOYED	42,400	45,100	50,300	57,000	61,500	65,900
INDUSTRY, TOTAL	22,100	22,900	26,500	31,800	34,500	37,900
SELF-EMPLOYED	800	1,000	1,000	1,600	1,600	2,300
4 YR. COLL./UNIV.	14,800	15,700	17,000	18,000	20,200	21,500
HOSPITALS/CLINICS	*	*	100	*	*	*
NONPROFIT ORGS	1,200	1,600	2,000	2,300	1,900	1,700
FEDERAL GOVT	3,000	3,500	3,600	3,800	3,800	3,800
STATE/LOCAL GOVT	400	400	200	400	400	400
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	2,000	2,000	2,400	2,500	3,700	3,800
INDUSTRY, TOTAL	800	800	900	1,100	1,900	2,100
SELF-EMPLOYED	*	*	*	*	100	*
4 YR. COLL./UNIV.	500	600	800	700	900	700
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	100	100	200	300	300
FEDERAL GOVT	400	400	400	400	500	600
STATE/LOCAL GOVT	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	5,400	5,600	6,200	7,100	7,000	7,100
INDUSTRY, TOTAL	3,900	4,100	4,500	5,300	4,800	5,100
SELF-EMPLOYED	100	100	200	100	100	200
4 YR. COLL./UNIV.	1,200	1,200	1,100	1,400	1,700	1,700
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	100	200	100	200	100
FEDERAL GOVT	100	200	300	300	200	200
STATE/LOCAL GOVT	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	3,800	4,100	5,200	6,100	5,300	6,400
INDUSTRY, TOTAL	1,100	1,200	1,800	2,600	1,900	2,400
SELF-EMPLOYED	100	100	200	300	300	500
4 YR. COLL./UNIV.	2,000	2,200	2,700	2,900	3,100	3,400
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	100	*	*
FEDERAL GOVT	200	300	200	100	100	300
STATE/LOCAL GOVT	200	200	100	200	100	200
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	8,500	8,300	8,600	10,600	12,700	14,200
INDUSTRY, TOTAL	4,600	3,900	4,700	6,200	7,600	8,600
SELF-EMPLOYED	100	200	200	300	300	300
4 YR. COLL./UNIV.	3,100	3,300	2,900	3,600	4,000	4,600
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	300	200	300	200	200
FEDERAL GOVT	500	600	700	500	800	800
STATE/LOCAL GOVT	*	*	*	100	100	*
MATERIALS SCI. ENGINEERS						
TOTAL EMPLOYED	4,800	5,200	5,700	6,100	7,400	7,300
INDUSTRY, TOTAL	3,000	3,200	3,500	4,000	4,900	4,800
SELF-EMPLOYED	100	100	100	300	100	200
4 YR. COLL./UNIV.	1,300	1,500	1,600	1,500	1,800	1,800
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	200	200	300	200	200	200
FEDERAL GOVT	300	300	300	400	500	400
STATE/LOCAL GOVT	*	*	*	*	*	*
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	4,000	4,600	5,200	5,400	5,700	6,600
INDUSTRY, TOTAL	1,800	2,100	2,400	2,600	2,600	3,100
SELF-EMPLOYED	100	100	*	100	100	200
4 YR. COLL./UNIV.	1,800	2,000	2,200	2,100	2,600	2,900
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	200	200	200	300	100	200
FEDERAL GOVT	200	300	300	300	400	300
STATE/LOCAL GOVT	*	*	*	*	*	*
NUCLEAR ENGINEERS						
TOTAL EMPLOYED	1,700	1,800	2,300	2,100	2,300	2,400
INDUSTRY, TOTAL	900	1,000	900	1,100	1,400	1,500
SELF-EMPLOYED	*	*	*	*	100	*
4 YR. COLL./UNIV.	500	500	900	600	700	500
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	100	200	200	100	200
FEDERAL GOVT	100	200	200	100	100	100
STATE/LOCAL GOVT	*	*	*	100	100	100

* TOO FEW CASES TO ESTIMATE

TABLE B-4. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85
CONTINUED

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
SYSTEMS DESIGN ENGINEERS						
TOTAL EMPLOYED	2,400	3,600	4,900	5,300	3,900	3,700
INDUSTRY, TOTAL	1,200	1,900	3,000	3,000	2,300	2,500
SELF-EMPLOYED	100	*	*	100	200	200
4 YR. COLL./UNIV.	700	800	900	1,000	900	800
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	200	300	500	500	400	200
FEDERAL GOVT	300	400	400	700	300	100
STATE/LOCAL GOVT	*	*	100	*	*	*
OTHER ENGINEERS						
TOTAL EMPLOYED	9,800	9,900	9,900	11,800	13,600	14,300
INDUSTRY, TOTAL	4,700	4,700	4,700	5,900	7,200	7,800
SELF-EMPLOYED	200	300	200	400	400	700
4 YR. COLL./UNIV.	3,800	3,800	3,900	4,200	4,600	5,000
HOSPITALS/CLINICS	*	*	100	*	*	*
NONPROFIT ORGS	200	300	400	500	400	300
FEDERAL GOVT	900	800	700	1,000	1,100	1,000
STATE/LOCAL GOVT	100	100	*	*	100	100

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-5. EMPLOYED MEN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	233,900	257,500	280,900	303,000	320,500	341,900
INDUSTRY, TOTAL	62,500	68,600	78,300	91,900	103,300	112,800
SELF-EMPLOYED	5,100	6,200	8,500	11,800	13,900	17,500
4 YR. COLL./UNIV.	129,400	139,900	147,300	155,500	160,600	170,300
HOSPITALS/CLINICS	5,700	6,600	7,800	7,700	7,900	8,000
NONPROFIT ORGS.	7,400	8,800	10,600	10,500	9,600	10,400
FEDERAL GOVT.	18,000	20,100	22,300	23,100	23,300	23,600
STATE/LOCAL GOVT.	4,300	4,500	5,000	5,200	6,000	6,600
SCIENTISTS						
TOTAL EMPLOYED	191,700	212,700	231,000	246,700	260,000	277,500
INDUSTRY, TOTAL	40,500	45,800	52,000	60,500	69,400	75,800
SELF-EMPLOYED	4,400	5,200	7,500	10,200	12,300	15,100
4 YR. COLL./UNIV.	114,700	124,200	130,600	137,700	140,600	149,300
HOSPITALS/CLINICS	5,700	6,600	7,800	7,700	7,900	7,900
NONPROFIT ORGS.	6,200	7,200	8,600	8,200	7,700	8,800
FEDERAL GOVT.	15,000	16,600	18,800	19,400	19,600	19,900
STATE/LOCAL GOVT.	3,900	4,100	4,700	4,900	5,700	6,300
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	52,100	54,600	57,100	59,300	59,800	62,800
INDUSTRY, TOTAL	21,700	22,400	24,200	26,300	27,300	28,600
SELF-EMPLOYED	600	500	900	1,100	700	1,100
4 YR. COLL./UNIV.	22,700	24,000	24,400	25,000	24,600	26,100
HOSPITALS/CLINICS	400	500	400	400	500	500
NONPROFIT ORGS.	1,800	1,900	1,800	1,900	1,600	2,100
FEDERAL GOVT.	3,600	3,700	4,400	4,100	4,000	3,700
STATE/LOCAL GOVT.	300	300	200	300	200	300
MATH SCIENTISTS						
TOTAL EMPLOYED	12,700	13,600	14,100	14,300	15,000	15,200
INDUSTRY, TOTAL	1,000	1,300	1,400	1,500	1,900	1,700
SELF-EMPLOYED	*	100	200	200	200	200
4 YR. COLL./UNIV.	10,600	10,900	11,200	11,300	11,700	11,900
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	200	200	300	200	200	200
FEDERAL GOVT.	500	600	800	800	700	800
STATE/LOCAL GOVT.	*	*	*	*	*	*
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	3,400	5,500	6,300	8,400	10,900	13,300
INDUSTRY, TOTAL	1,400	3,000	3,500	4,800	6,100	7,400
SELF-EMPLOYED	100	100	100	300	200	600
4 YR. COLL./UNIV.	1,600	2,000	2,300	2,700	3,600	4,700
HOSPITALS/CLINICS	*	*	*	*	100	*
NONPROFIT ORGS.	100	200	200	300	300	300
FEDERAL GOVT.	200	200	300	300	500	700
STATE/LOCAL GOVT.	*	100	*	100	200	200
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	11,800	12,600	14,000	15,100	15,600	16,200
INDUSTRY, TOTAL	2,900	3,000	4,100	4,500	4,900	4,900
SELF-EMPLOYED	300	200	400	500	600	700
4 YR. COLL./UNIV.	5,600	5,900	5,700	6,200	6,100	6,600
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	500	500	600	600	500	600
FEDERAL GOVT.	2,200	2,400	2,600	2,900	2,900	3,100
STATE/LOCAL GOVT.	400	500	600	600	800	600
LIFE SCIENTISTS						
TOTAL EMPLOYED	55,800	61,400	67,500	71,600	76,600	82,100
INDUSTRY, TOTAL	8,200	9,200	10,200	11,800	14,600	16,600
SELF-EMPLOYED	1,000	1,100	1,600	2,200	2,600	3,000
4 YR. COLL./UNIV.	36,200	39,300	42,400	45,200	46,300	48,900
HOSPITALS/CLINICS	1,800	2,100	2,800	2,500	2,800	3,100
NONPROFIT ORGS.	1,500	1,900	2,400	2,400	2,500	2,900
FEDERAL GOVT.	5,500	5,800	6,500	6,500	6,900	6,900
STATE/LOCAL GOVT.	1,200	1,200	1,300	1,400	1,300	1,700
PSYCHOLOGISTS						
TOTAL EMPLOYED	23,700	26,100	28,700	31,100	33,000	35,600
INDUSTRY, TOTAL	3,300	4,400	5,300	7,100	8,900	10,400
SELF-EMPLOYED	2,000	2,700	3,700	4,800	6,300	7,700
4 YR. COLL./UNIV.	12,900	13,100	13,700	14,100	14,100	15,300
HOSPITALS/CLINICS	3,400	4,000	4,500	4,600	4,400	4,200
NONPROFIT ORGS.	900	900	1,100	1,200	1,100	1,100
FEDERAL GOVT.	800	1,100	900	1,000	1,000	800
STATE/LOCAL GOVT.	900	1,000	1,300	1,100	1,500	1,400
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	32,200	39,000	43,300	47,000	49,300	52,200
INDUSTRY, TOTAL	2,100	2,700	3,300	4,500	5,700	6,200
SELF-EMPLOYED	300	500	700	1,100	1,700	1,900
4 YR. COLL./UNIV.	25,000	29,100	31,000	33,200	34,200	35,800
HOSPITALS/CLINICS	*	100	*	*	100	200
NONPROFIT ORGS.	1,200	1,600	2,300	1,600	1,500	1,600
FEDERAL GOVT.	2,200	2,800	3,300	3,700	3,600	4,000
STATE/LOCAL GOVT.	1,000	1,000	1,300	1,400	1,700	2,000
ENGINEERS						
TOTAL EMPLOYED	42,200	44,800	49,800	56,300	60,500	64,400
INDUSTRY, TOTAL	22,000	22,800	26,200	31,400	33,900	37,000
SELF-EMPLOYED	800	1,000	1,000	1,600	1,600	2,300
4 YR. COLL./UNIV.	14,700	15,600	16,800	17,800	19,900	21,100
HOSPITALS/CLINICS	*	*	100	*	*	*
NONPROFIT ORGS.	1,200	1,500	2,000	2,300	1,900	1,700
FEDERAL GOVT.	3,000	3,500	3,500	3,800	3,800	3,700
STATE/LOCAL GOVT.	400	400	200	400	400	300

* TOO FEW CASES TO ESTIMATE

TABLE B-5. EMPLOYED MEN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85
CONTINUED

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	2,000	2,000	2,300	2,500	3,600	3,700
INDUSTRY, TOTAL	800	800	900	1,100	1,900	2,000
SELF-EMPLOYED	*	*	*	*	100	*
4 YR. COLL./UNIV.	500	500	800	700	900	700
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	100	100	200	300	300
FEDERAL GOVT	400	400	400	400	500	600
STATE/LOCAL GOVT	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	5,300	5,600	6,100	7,100	6,900	7,000
INDUSTRY, TOTAL	3,900	4,100	4,500	5,300	4,700	5,000
SELF-EMPLOYED	100	100	200	100	100	200
4 YR. COLL./UNIV.	1,200	1,200	1,100	1,400	1,700	1,700
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	100	200	100	200	100
FEDERAL GOVT	100	200	300	300	200	200
STATE/LOCAL GOVT	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	3,800	4,100	5,100	6,000	5,200	6,300
INDUSTRY, TOTAL	1,100	1,200	1,800	2,500	1,900	2,400
SELF-EMPLOYED	100	100	200	300	300	500
4 YR. COLL./UNIV.	2,000	2,100	2,700	2,800	3,100	3,400
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	100	*	*
FEDERAL GOVT	200	300	200	100	100	300
STATE/LOCAL GOVT	200	200	100	200	100	100
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	8,500	8,200	8,500	10,500	12,500	13,900
INDUSTRY, TOTAL	4,600	3,900	4,700	6,100	7,500	8,300
SELF-EMPLOYED	100	200	200	300	300	300
4 YR. COLL./UNIV.	3,100	3,200	2,900	3,600	3,900	4,500
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	300	200	300	200	200
FEDERAL GOVT	500	600	700	500	800	700
STATE/LOCAL GOVT	*	*	*	100	100	*
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	4,000	4,600	5,200	5,300	5,600	6,500
INDUSTRY, TOTAL	1,800	2,100	2,400	2,600	2,600	3,100
SELF-EMPLOYED	100	100	*	100	100	200
4 YR. COLL./UNIV.	1,800	2,000	2,200	2,100	2,500	2,900
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	200	200	200	300	100	200
FEDERAL GOVT	200	300	300	300	300	300
STATE/LOCAL GOVT	*	*	*	*	*	*
OTHER ENGINEERS						
TOTAL EMPLOYED	18,600	20,300	22,500	24,900	26,700	26,900
INDUSTRY, TOTAL	9,800	10,700	12,000	13,700	15,400	16,100
SELF-EMPLOYED	500	500	400	700	700	1,100
4 YR. COLL./UNIV.	6,100	6,500	7,200	7,200	7,900	7,900
HOSPITALS/CLINICS	*	*	100	*	*	*
NONPROFIT ORGS	700	900	1,300	1,400	1,100	1,000
FEDERAL GOVT	1,500	1,700	1,600	2,100	1,900	1,600
STATE/LOCAL GOVT	100	100	100	100	200	100

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-6. EMPLOYED WOMEN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	22,100	27,600	33,400	41,000	48,800	58,500
INDUSTRY, TOTAL	2,100	3,000	4,600	7,200	10,200	12,900
SELF-EMPLOYED	900	1,200	1,900	2,900	4,100	5,700
4 YR. COLL./UNIV.	14,200	17,200	20,100	23,700	27,000	31,700
HOSPITALS/CLINICS	1,800	2,000	1,900	2,200	2,600	3,400
NONPROFIT ORGS	900	1,400	1,800	2,100	2,300	3,200
FEDERAL GOVT	1,000	1,300	1,600	2,000	2,500	2,700
STATE/LOCAL GOVT	600	800	1,200	1,400	1,700	1,600
SCIENTISTS						
TOTAL EMPLOYED	21,800	27,300	32,900	40,200	47,800	57,000
INDUSTRY, TOTAL	2,000	2,900	4,300	6,800	9,600	12,100
SELF-EMPLOYED	900	1,200	1,900	2,900	4,100	5,700
4 YR. COLL./UNIV.	14,100	17,100	19,900	23,500	26,700	31,200
HOSPITALS/CLINICS	1,800	2,000	1,900	2,200	2,600	3,400
NONPROFIT ORGS	900	1,400	1,800	2,100	2,300	3,100
FEDERAL GOVT	1,000	1,200	1,600	2,000	2,400	2,600
STATE/LOCAL GOVT	600	800	1,200	1,300	1,700	1,600
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	2,500	2,900	3,100	3,800	4,200	4,700
INDUSTRY, TOTAL	500	600	800	1,100	1,400	1,700
SELF-EMPLOYED	*	*	*	*	100	100
4 YR. COLL./UNIV.	1,500	1,600	1,600	1,800	1,900	2,100
HOSPITALS/CLINICS	100	100	100	100	*	*
NONPROFIT ORGS	100	200	100	200	200	200
FEDERAL GOVT	200	200	200	200	300	300
STATE/LOCAL GOVT	*	*	*	100	100	*
MATH SCIENTISTS						
TOTAL EMPLOYED	900	1,000	1,100	1,300	1,400	1,600
INDUSTRY, TOTAL	*	100	100	100	200	200
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	800	900	900	1,000	1,100	1,100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	100
FEDERAL GOVT	*	*	*	100	100	100
STATE/LOCAL GOVT	*	*	*	*	*	*
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	100	200	400	700	1,300	1,600
INDUSTRY, TOTAL	100	100	200	400	700	1,000
SELF-EMPLOYED	*	*	*	*	100	100
4 YR. COLL./UNIV.	100	100	100	200	300	500
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	100
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	100	100
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	300	400	600	900	900	1,100
INDUSTRY, TOTAL	100	100	100	200	300	300
SELF-EMPLOYED	*	*	*	*	*	100
4 YR. COLL./UNIV.	200	200	300	400	400	500
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	100	*	100	*
FEDERAL GOVT	*	100	100	100	200	200
STATE/LOCAL GOVT	*	*	*	*	*	*
LIFE SCIENTISTS						
TOTAL EMPLOYED	7,500	9,100	11,300	13,300	16,200	19,700
INDUSTRY, TOTAL	500	600	900	1,300	1,900	2,600
SELF-EMPLOYED	100	100	200	400	500	700
4 YR. COLL./UNIV.	5,300	6,400	7,900	9,200	11,000	12,900
HOSPITALS/CLINICS	400	500	500	500	800	1,000
NONPROFIT ORGS	300	500	600	700	700	1,000
FEDERAL GOVT	500	600	700	800	900	1,100
STATE/LOCAL GOVT	200	200	300	300	400	500
PSYCHOLOGISTS						
TOTAL EMPLOYED	6,300	7,600	9,200	11,700	13,700	16,600
INDUSTRY, TOTAL	800	1,200	1,800	3,000	4,100	5,100
SELF-EMPLOYED	700	1,000	1,500	2,300	3,100	4,300
4 YR. COLL./UNIV.	3,100	3,500	3,900	4,900	5,300	6,200
HOSPITALS/CLINICS	1,200	1,400	1,400	1,500	1,600	2,200
NONPROFIT ORGS	200	300	600	500	700	1,000
FEDERAL GOVT	100	100	200	200	200	200
STATE/LOCAL GOVT	300	300	400	600	700	500
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	4,100	6,000	7,100	8,600	10,100	11,800
INDUSTRY, TOTAL	100	200	400	600	1,000	1,200
SELF-EMPLOYED	100	100	100	200	300	500
4 YR. COLL./UNIV.	3,200	4,500	5,200	6,000	6,800	8,000
HOSPITALS/CLINICS	*	*	*	100	100	100
NONPROFIT ORGS	200	400	400	600	600	800
FEDERAL GOVT	200	200	400	600	700	700
STATE/LOCAL GOVT	100	200	400	300	400	500
ENGINEERS						
TOTAL EMPLOYED	200	300	500	800	1,100	1,500
INDUSTRY, TOTAL	100	100	300	400	600	800
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	100	100	200	200	300	400
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	100	100
STATE/LOCAL GOVT	*	*	*	*	*	100

* TOO FEW CASES TO ESTIMATE

TABLE B-6. EMPLOYED WOMEN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85
CONTINUED

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	100	100
INDUSTRY, TOTAL	*	*	*	*	*	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	*	*	*	100	100	100
INDUSTRY, TOTAL	*	*	*	*	100	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	*	*	100	100	100	100
INDUSTRY, TOTAL	*	*	*	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	*	*	100	100	200	300
INDUSTRY, TOTAL	*	*	*	100	200	200
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	100	100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	100	100
INDUSTRY, TOTAL	*	*	*	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
OTHER ENGINEERS						
TOTAL EMPLOYED	100	200	300	400	500	800
INDUSTRY, TOTAL	100	100	100	200	300	500
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	100	100	100	100	200	200
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-7. EMPLOYED WHITE DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	232,800	258,300	285,000	309,100	329,900	355,100
INDUSTRY, TOTAL	58,100	63,300	72,600	85,800	98,100	108,100
SELF-EMPLOYED	5,700	7,000	9,900	14,100	17,100	22,000
4 YR. COLL./UNIV.	130,800	143,100	153,000	162,700	169,500	181,100
HOSPITALS/CLINICS	7,000	8,000	9,100	9,200	9,500	10,500
NONPROFIT ORGS	7,600	9,300	11,500	11,600	10,800	12,200
FEDERAL GOVT	17,700	19,800	22,300	23,300	23,700	23,900
STATE/LOCAL GOVT	4,400	4,800	5,700	6,100	7,000	7,400
SCIENTISTS						
TOTAL EMPLOYED	195,800	219,600	243,000	261,900	280,000	302,500
INDUSTRY, TOTAL	39,200	44,100	51,700	60,900	71,400	78,900
SELF-EMPLOYED	4,900	6,000	9,000	12,600	15,800	19,900
4 YR. COLL./UNIV.	117,700	129,400	138,100	146,900	152,200	163,100
HOSPITALS/CLINICS	7,000	7,900	9,000	9,200	9,500	10,500
NONPROFIT ORGS	6,500	8,000	9,800	9,500	9,200	10,900
FEDERAL GOVT	14,900	16,600	19,100	19,900	20,300	20,600
STATE/LOCAL GOVT	4,000	4,600	5,500	5,800	6,700	7,200
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	49,800	52,000	54,600	56,200	56,800	59,600
INDUSTRY, TOTAL	20,400	20,800	22,600	24,200	25,300	26,300
SELF-EMPLOYED	600	500	900	1,100	700	1,100
4 YR. COLL./UNIV.	21,800	23,100	23,600	24,100	23,700	25,100
HOSPITALS/CLINICS	400	500	500	400	500	500
NONPROFIT ORGS	1,700	1,800	1,800	1,900	1,700	2,100
FEDERAL GOVT	3,500	3,600	4,200	3,800	3,800	3,600
STATE/LOCAL GOVT	200	200	200	300	200	300
MATH SCIENTISTS						
TOTAL EMPLOYED	12,300	13,200	13,700	14,000	14,600	14,900
INDUSTRY, TOTAL	1,000	1,200	1,400	1,500	1,700	1,800
SELF-EMPLOYED	*	100	200	200	200	200
4 YR. COLL./UNIV.	10,300	10,600	10,800	11,000	11,600	11,600
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	200	300	300	200	200	200
FEDERAL GOVT	500	600	700	800	700	800
STATE/LOCAL GOVT	*	*	100	*	*	*
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	3,200	5,000	6,100	8,100	11,000	13,100
INDUSTRY, TOTAL	1,300	2,600	3,300	4,500	6,100	7,200
SELF-EMPLOYED	100	100	100	300	300	700
4 YR. COLL./UNIV.	1,600	1,900	2,200	2,700	3,600	4,400
HOSPITALS/CLINICS	*	*	*	*	100	*
NONPROFIT ORGS	100	100	200	300	300	300
FEDERAL GOVT	200	200	300	300	500	600
STATE/LOCAL GOVT	*	100	*	200	300	200
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	11,400	12,100	13,800	15,000	15,500	15,800
INDUSTRY, TOTAL	2,800	2,800	4,000	4,400	4,700	4,700
SELF-EMPLOYED	300	200	300	500	600	700
4 YR. COLL./UNIV.	5,500	5,700	5,700	6,200	6,200	6,600
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	500	500	600	500	500	600
FEDERAL GOVT	2,100	2,300	2,600	3,000	3,000	3,000
STATE/LOCAL GOVT	400	500	600	600	800	600
LIFE SCIENTISTS						
TOTAL EMPLOYED	57,700	64,200	71,900	77,100	83,700	92,000
INDUSTRY, TOTAL	7,900	8,700	10,200	11,900	14,800	17,100
SELF-EMPLOYED	1,100	1,100	1,700	2,400	2,900	3,300
4 YR. COLL./UNIV.	37,800	41,600	45,700	49,300	51,700	55,900
HOSPITALS/CLINICS	2,000	2,200	2,800	2,600	3,100	3,700
NONPROFIT ORGS	1,600	2,200	2,700	2,900	2,900	3,400
FEDERAL GOVT	5,600	6,000	6,800	6,800	7,200	7,400
STATE/LOCAL GOVT	1,300	1,300	1,400	1,600	1,500	2,000
PSYCHOLOGISTS						
TOTAL EMPLOYED	28,300	31,900	36,500	41,000	44,500	49,500
INDUSTRY, TOTAL	3,900	5,300	6,800	9,800	12,700	15,100
SELF-EMPLOYED	2,600	3,500	5,000	6,900	9,200	11,700
4 YR. COLL./UNIV.	15,100	15,600	16,900	18,100	18,400	20,200
HOSPITALS/CLINICS	4,500	5,200	5,700	6,000	5,700	6,100
NONPROFIT ORGS	1,000	1,200	1,700	1,600	1,700	2,000
FEDERAL GOVT	900	1,200	1,100	1,200	1,100	1,000
STATE/LOCAL GOVT	1,100	1,200	1,600	1,600	2,000	1,700
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	33,100	41,100	46,400	50,500	53,800	57,700
INDUSTRY, TOTAL	2,000	2,700	3,500	4,600	6,100	6,800
SELF-EMPLOYED	400	500	800	1,200	1,800	2,300
4 YR. COLL./UNIV.	25,800	30,800	33,200	35,500	37,100	39,300
HOSPITALS/CLINICS	100	100	*	100	100	200
NONPROFIT ORGS	1,400	1,900	2,500	2,000	1,900	2,100
FEDERAL GOVT	2,100	2,800	3,400	4,100	4,000	4,300
STATE/LOCAL GOVT	1,000	1,100	1,500	1,600	1,900	2,300
ENGINEERS						
TOTAL EMPLOYED	36,900	38,600	42,000	47,200	49,900	52,600
INDUSTRY, TOTAL	18,800	19,200	20,900	24,900	26,700	29,200
SELF-EMPLOYED	800	900	900	1,400	1,400	2,100
4 YR. COLL./UNIV.	13,000	13,700	15,000	15,800	17,300	18,000
HOSPITALS/CLINICS	*	*	100	*	*	*
NONPROFIT ORGS	1,100	1,300	1,700	2,100	1,600	1,300
FEDERAL GOVT	2,800	3,100	3,200	3,400	3,400	3,200
STATE/LOCAL GOVT	300	300	200	300	300	300

* TOO FEW CASES TO ESTIMATE

TABLE B-7. EMPLOYED WHITE DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85
CONTINUED

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	1,800	1,800	2,100	2,200	3,100	3,300
INDUSTRY, TOTAL	600	700	700	900	1,600	1,800
SELF-EMPLOYED	*	*	*	*	100	*
4 YR. COLL./UNIV.	500	500	700	600	700	600
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	100	100	200	200	300
FEDERAL GOVT	400	400	400	400	500	500
STATE/LOCAL GOVT	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	4,700	4,700	5,000	5,600	5,400	5,100
INDUSTRY, TOTAL	3,400	3,400	3,600	4,100	3,700	3,600
SELF-EMPLOYED	100	100	200	100	100	200
4 YR. COLL./UNIV.	1,000	1,000	1,000	1,100	1,400	1,300
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	100	200	100	100	*
FEDERAL GOVT	100	200	100	200	100	100
STATE/LOCAL GOVT	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	3,100	3,300	3,900	4,800	4,200	5,100
INDUSTRY, TOTAL	800	800	1,100	1,600	1,300	1,600
SELF-EMPLOYED	100	100	100	200	100	400
4 YR. COLL./UNIV.	1,700	1,800	2,300	2,600	2,700	3,100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	100	*	*
FEDERAL GOVT	200	200	200	100	*	200
STATE/LOCAL GOVT	200	200	100	100	100	100
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	7,300	7,200	7,300	8,900	10,300	11,400
INDUSTRY, TOTAL	3,900	3,400	3,800	5,200	5,900	6,700
SELF-EMPLOYED	100	200	200	300	200	200
4 YR. COLL./UNIV.	2,700	2,800	2,700	3,100	3,500	3,800
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	300	100	200	200	100
FEDERAL GOVT	400	500	600	400	600	600
STATE/LOCAL GOVT	*	*	*	100	100	*
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	3,400	3,800	4,100	4,300	4,400	5,100
INDUSTRY, TOTAL	1,400	1,600	1,700	2,000	1,900	2,300
SELF-EMPLOYED	100	100	*	100	100	200
4 YR. COLL./UNIV.	1,600	1,700	1,900	1,900	2,000	2,300
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	200	100	100	200	100	100
FEDERAL GOVT	200	300	300	300	300	300
STATE/LOCAL GOVT	*	*	*	*	*	*
OTHER ENGINEERS						
TOTAL EMPLOYED	16,700	17,900	19,700	21,400	22,400	22,700
INDUSTRY, TOTAL	8,700	9,200	10,000	11,100	12,300	13,200
SELF-EMPLOYED	400	500	400	700	700	1,100
4 YR. COLL./UNIV.	5,600	5,800	6,400	6,600	6,800	6,900
HOSPITALS/CLINICS	*	*	100	*	*	*
NONPROFIT ORGS	600	800	1,200	1,300	1,000	800
FEDERAL GOVT	1,400	1,600	1,600	2,000	1,800	1,400
STATE/LOCAL GOVT	100	100	100	*	100	100

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-8. EMPLOYED BLACK DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	2,500	2,700	3,200	4,200	5,000	5,700
INDUSTRY, TOTAL	400	400	400	600	700	1,000
SELF-EMPLOYED	*	100	100	100	100	200
4 YR. COLL./UNIV.	1,700	1,700	2,000	2,700	3,100	3,500
HOSPITALS/CLINICS	100	100	100	100	200	200
NONPROFIT ORGS	100	100	100	200	200	200
FEDERAL GOVT	200	200	300	300	300	300
STATE/LOCAL GOVT	*	100	100	100	200	200
SCIENTISTS						
TOTAL EMPLOYED	2,400	2,600	3,100	4,000	4,500	5,200
INDUSTRY, TOTAL	300	400	300	500	500	700
SELF-EMPLOYED	*	100	100	100	100	200
4 YR. COLL./UNIV.	1,600	1,700	1,900	2,600	2,900	3,400
HOSPITALS/CLINICS	100	100	100	100	200	200
NONPROFIT ORGS	100	*	100	200	200	200
FEDERAL GOVT	200	200	300	300	300	300
STATE/LOCAL GOVT	*	100	100	100	200	200
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	500	500	400	600	700	500
INDUSTRY, TOTAL	200	200	100	200	200	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	200	200	200	300	400	300
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	100	100	100	100	100	100
STATE/LOCAL GOVT	*	*	*	*	*	*
MATH SCIENTISTS						
TOTAL EMPLOYED	100	100	100	200	200	200
INDUSTRY, TOTAL	*	*	*	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	100	100	100	100	100	100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	*	*	*	*	*	100
INDUSTRY, TOTAL	*	*	*	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	*	*	100	*	*	100
INDUSTRY, TOTAL	*	*	100	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
LIFE SCIENTISTS						
TOTAL EMPLOYED	700	800	900	1,000	1,100	1,400
INDUSTRY, TOTAL	*	100	*	100	100	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	500	500	600	700	700	900
HOSPITALS/CLINICS	*	*	*	*	*	100
NONPROFIT ORGS	*	*	100	*	*	*
FEDERAL GOVT	100	100	100	100	100	100
STATE/LOCAL GOVT	*	*	*	*	100	100
PSYCHOLOGISTS						
TOTAL EMPLOYED	400	500	600	800	1,000	1,200
INDUSTRY, TOTAL	*	*	100	100	100	200
SELF-EMPLOYED	*	*	*	100	100	100
4 YR. COLL./UNIV.	300	300	300	400	500	600
HOSPITALS/CLINICS	*	*	100	100	100	100
NONPROFIT ORGS	*	*	*	*	100	100
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	100
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	600	700	1,000	1,300	1,500	1,700
INDUSTRY, TOTAL	*	*	*	100	100	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	400	500	700	1,000	1,100	1,300
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	100	100	100	100
FEDERAL GOVT	*	*	100	100	*	100
STATE/LOCAL GOVT	*	*	*	100	100	100
ENGINEERS						
TOTAL EMPLOYED	100	100	100	300	400	500
INDUSTRY, TOTAL	*	*	*	100	100	300
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	100	100	100	100	200	200
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*

* TOO FEW CASES TO ESTIMATE

TABLE B-8. EMPLOYED BLACK DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85
CONTINUED

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	*	*
INDUSTRY, TOTAL	*	*	*	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	*	100
INDUSTRY, TOTAL	*	*	*	*	*	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	*	100
INDUSTRY, TOTAL	*	*	*	*	*	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	100	100
INDUSTRY, TOTAL	*	*	*	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	100	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	100	100
INDUSTRY, TOTAL	*	*	*	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	100	100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
OTHER ENGINEERS						
TOTAL EMPLOYED	*	100	100	100	200	200
INDUSTRY, TOTAL	*	*	*	100	100	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-9. EMPLOYED ASIAN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	13,600	16,300	22,900	27,400	29,900	34,500
INDUSTRY, TOTAL	4,600	6,100	9,200	11,900	13,500	15,100
SELF-EMPLOYED	100	100	300	300	600	600
4 YR. COLL./UNIV.	7,000	7,600	10,600	12,000	12,500	14,800
HOSPITALS/CLINICS	300	400	400	500	500	500
NONPROFIT ORGS	400	600	700	800	800	1,100
FEDERAL GOVT	700	800	1,100	1,300	1,400	1,800
STATE/LOCAL GOVT	300	300	300	300	400	500
SCIENTISTS						
TOTAL EMPLOYED	9,300	11,200	15,000	18,300	19,300	22,700
INDUSTRY, TOTAL	1,900	3,000	3,800	5,400	6,200	7,200
SELF-EMPLOYED	100	100	200	200	400	400
4 YR. COLL./UNIV.	5,900	6,200	8,900	10,200	10,100	11,900
HOSPITALS/CLINICS	300	400	400	500	500	500
NONPROFIT ORGS	300	400	400	500	500	700
FEDERAL GOVT	500	600	800	1,000	1,100	1,300
STATE/LOCAL GOVT	200	200	200	200	300	400
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	3,000	3,400	4,700	5,800	5,700	6,600
INDUSTRY, TOTAL	1,100	1,400	2,200	2,800	3,000	3,600
SELF-EMPLOYED	*	*	*	*	*	100
4 YR. COLL./UNIV.	1,400	1,400	1,900	2,100	2,000	2,300
HOSPITALS/CLINICS	*	100	*	100	100	*
NONPROFIT ORGS	200	200	100	200	100	100
FEDERAL GOVT	200	200	300	400	400	400
STATE/LOCAL GOVT	*	*	100	100	*	*
MATH SCIENTISTS						
TOTAL EMPLOYED	700	800	1,100	1,200	1,400	1,400
INDUSTRY, TOTAL	100	100	100	100	300	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	700	600	900	900	1,000	1,100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	100	*
STATE/LOCAL GOVT	*	*	*	*	*	*
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	200	600	600	900	900	1,600
INDUSTRY, TOTAL	*	400	300	600	600	1,000
SELF-EMPLOYED	*	*	100	*	*	*
4 YR. COLL./UNIV.	100	200	200	200	300	600
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	300	600	500	700	800	1,100
INDUSTRY, TOTAL	100	200	200	300	400	400
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	200	300	200	300	300	400
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	*	*	*	100	*	*
FEDERAL GOVT	100	100	100	100	100	200
STATE/LOCAL GOVT	*	*	*	*	*	100
LIFE SCIENTISTS						
TOTAL EMPLOYED	3,400	4,000	5,400	6,300	6,800	7,400
INDUSTRY, TOTAL	500	700	800	1,100	1,300	1,600
SELF-EMPLOYED	100	*	100	100	100	200
4 YR. COLL./UNIV.	2,200	2,500	3,700	4,200	4,200	4,500
HOSPITALS/CLINICS	200	300	300	300	400	300
NONPROFIT ORGS	100	100	200	200	300	400
FEDERAL GOVT	200	200	200	300	300	400
STATE/LOCAL GOVT	100	100	100	100	100	100
PSYCHOLOGISTS						
TOTAL EMPLOYED	300	300	400	600	700	800
INDUSTRY, TOTAL	*	*	100	100	100	200
SELF-EMPLOYED	*	*	*	*	100	100
4 YR. COLL./UNIV.	200	100	200	300	300	300
HOSPITALS/CLINICS	*	100	*	100	100	100
NONPROFIT ORGS	*	*	*	*	*	*
FEDERAL GOVT	*	*	*	*	*	*
STATE/LOCAL GOVT	*	*	*	*	*	*
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	1,400	1,500	2,300	3,000	3,100	3,800
INDUSTRY, TOTAL	100	100	200	400	500	400
SELF-EMPLOYED	*	*	*	100	200	100
4 YR. COLL./UNIV.	1,100	1,100	1,700	2,200	2,100	2,700
HOSPITALS/CLINICS	*	*	*	*	*	100
NONPROFIT ORGS	*	*	100	*	*	100
FEDERAL GOVT	100	100	100	100	200	200
STATE/LOCAL GOVT	100	*	*	100	100	100
ENGINEERS						
TOTAL EMPLOYED	4,300	5,000	7,900	9,000	10,500	11,900
INDUSTRY, TOTAL	2,800	3,100	5,400	6,500	7,300	7,900
SELF-EMPLOYED	*	100	100	200	200	200
4 YR. COLL./UNIV.	1,200	1,400	1,700	1,800	2,400	3,000
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS	100	200	300	200	300	400
FEDERAL GOVT	200	200	300	300	300	500
STATE/LOCAL GOVT	100	100	100	100	100	100

* TOO FEW CASES TO ESTIMATE

TABLE B-9. EMPLOYED ASIAN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85
CONTINUED

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	200	100	200	300	500	500
INDUSTRY, TOTAL	100	100	200	200	300	300
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	100	100	100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	100	*
FEDERAL GOVT.	*	*	*	*	*	100
STATE/LOCAL GOVT.	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	500	700	1,200	1,600	1,500	1,900
INDUSTRY, TOTAL	400	600	900	1,200	1,100	1,400
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	100	100	100	300	300	400
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	100	*
FEDERAL GOVT.	*	*	100	100	100	100
STATE/LOCAL GOVT.	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	600	700	1,200	1,200	1,100	1,200
INDUSTRY, TOTAL	300	400	800	900	600	800
SELF-EMPLOYED	*	*	100	100	200	100
4 YR. COLL./UNIV.	200	200	300	300	300	300
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	100	100	*	*	*	100
STATE/LOCAL GOVT.	*	100	100	*	100	*
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	900	800	1,300	1,600	2,100	2,600
INDUSTRY, TOTAL	600	500	900	1,000	1,600	1,700
SELF-EMPLOYED	*	*	100	*	*	*
4 YR. COLL./UNIV.	300	300	200	400	300	600
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	100	*	100	100
FEDERAL GOVT.	*	100	100	100	100	200
STATE/LOCAL GOVT.	*	*	*	*	*	*
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	600	800	1,200	1,000	1,200	1,400
INDUSTRY, TOTAL	400	400	700	700	700	800
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	200	200	300	300	400	500
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	100	100	100	100
FEDERAL GOVT.	*	*	*	*	*	*
STATE/LOCAL GOVT.	*	*	*	*	*	*
OTHER ENGINEERS						
TOTAL EMPLOYED	1,500	1,900	2,800	3,400	4,200	4,400
INDUSTRY, TOTAL	1,000	1,200	2,000	2,600	3,000	2,900
SELF-EMPLOYED	*	*	*	100	*	*
4 YR. COLL./UNIV.	400	500	700	500	1,000	1,100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	100	100	100	100	*	200
FEDERAL GOVT.	100	100	*	100	100	200
STATE/LOCAL GOVT.	*	*	*	100	100	100

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-10. EMPLOYED HISPANIC DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	2,000	2,700	4,100	4,800	5,400	5,900
INDUSTRY, TOTAL	300	500	900	1,300	1,500	1,600
SELF-EMPLOYED	100	100	200	200	300	400
4 YR. COLL./UNIV.	1,100	1,600	2,100	2,400	2,600	2,900
HOSPITALS/CLINICS	100	100	100	100	200	200
NONPROFIT ORGS.	100	100	200	200	200	300
FEDERAL GOVT.	200	200	400	400	400	500
STATE/LOCAL GOVT.	100	*	100	100	100	200
SCIENTISTS						
TOTAL EMPLOYED	1,700	2,300	3,400	4,100	4,500	5,100
INDUSTRY, TOTAL	200	300	600	800	1,000	1,100
SELF-EMPLOYED	*	100	200	200	300	300
4 YR. COLL./UNIV.	1,000	1,400	1,800	2,200	2,300	2,600
HOSPITALS/CLINICS	100	100	100	100	200	200
NONPROFIT ORGS.	100	100	200	200	200	200
FEDERAL GOVT.	100	100	400	400	300	500
STATE/LOCAL GOVT.	100	*	100	100	100	200
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	400	500	900	900	900	900
INDUSTRY, TOTAL	100	100	300	300	300	300
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	200	200	300	400	400	400
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	100	100	200	100	100	100
STATE/LOCAL GOVT.	*	*	*	*	*	*
MATH SCIENTISTS						
TOTAL EMPLOYED	100	200	200	200	200	300
INDUSTRY, TOTAL	*	*	*	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	100	100	200	200	200	200
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	*	*	*	*	*	*
STATE/LOCAL GOVT.	*	*	*	*	*	*
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	*	*	100	100	200	200
INDUSTRY, TOTAL	*	*	*	*	100	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	100	100	100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	*	*	*	*	*	*
STATE/LOCAL GOVT.	*	*	*	*	*	*
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	100	100	200	200	200	300
INDUSTRY, TOTAL	*	*	100	*	100	*
SELF-EMPLOYED	*	*	100	*	*	*
4 YR. COLL./UNIV.	100	100	100	100	100	100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	*	*	*	100	*	100
STATE/LOCAL GOVT.	*	*	*	*	*	*
LIFE SCIENTISTS						
TOTAL EMPLOYED	600	700	1,000	1,200	1,300	1,400
INDUSTRY, TOTAL	100	100	100	200	200	200
SELF-EMPLOYED	*	*	*	*	100	100
4 YR. COLL./UNIV.	400	500	600	800	800	800
HOSPITALS/CLINICS	100	*	*	*	*	100
NONPROFIT ORGS.	*	*	100	100	100	100
FEDERAL GOVT.	100	*	100	100	100	200
STATE/LOCAL GOVT.	*	*	*	*	*	*
PSYCHOLOGISTS						
TOTAL EMPLOYED	200	300	500	600	700	1,000
INDUSTRY, TOTAL	*	*	100	100	200	300
SELF-EMPLOYED	*	*	100	100	100	200
4 YR. COLL./UNIV.	100	200	200	300	200	400
HOSPITALS/CLINICS	*	100	100	100	200	100
NONPROFIT ORGS.	*	*	*	*	*	100
FEDERAL GOVT.	*	*	*	*	*	*
STATE/LOCAL GOVT.	*	*	*	*	*	100
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	300	500	600	800	1,000	1,100
INDUSTRY, TOTAL	*	*	*	100	100	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	200	300	400	500	600	600
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	100	*	100	100
FEDERAL GOVT.	*	*	*	100	100	100
STATE/LOCAL GOVT.	*	*	*	100	100	100
ENGINEERS						
TOTAL EMPLOYED	300	400	600	800	1,000	800
INDUSTRY, TOTAL	100	200	300	500	600	400
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	100	200	300	200	300	300
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	*	*	*	100	100	100
STATE/LOCAL GOVT.	*	*	*	*	*	*

* TOO FEW CASES TO ESTIMATE

TABLE B-10. EMPLOYED HISPANIC DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975-85
CONTINUED

FIELD AND EMPLOYMENT SECTOR	1975	1977	1979	1981	1983	1985
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	*	*
INDUSTRY, TOTAL	*	*	*	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	*	*	*	*	*	*
STATE/LOCAL GOVT.	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	*	100	100	*	100	100
INDUSTRY, TOTAL	*	*	*	*	100	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	100	*	100	100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	*	*	*	*	*	*
STATE/LOCAL GOVT.	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	100	*	*	100	100	100
INDUSTRY, TOTAL	*	*	*	100	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	*	*	*	*	*	*
STATE/LOCAL GOVT.	*	*	*	*	*	*
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	100	100	100	100	200	200
INDUSTRY, TOTAL	*	*	100	100	100	100
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	100	100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	*	*	*	*	*	*
STATE/LOCAL GOVT.	*	*	*	*	*	*
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	*	*	100	*	100	100
INDUSTRY, TOTAL	*	*	*	*	*	*
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	*	*	*	*	*
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	*	*	*	*	*	*
STATE/LOCAL GOVT.	*	*	*	*	*	*
OTHER ENGINEERS						
TOTAL EMPLOYED	100	200	400	500	500	400
INDUSTRY, TOTAL	100	100	200	300	300	300
SELF-EMPLOYED	*	*	*	*	*	*
4 YR. COLL./UNIV.	*	100	200	100	100	100
HOSPITALS/CLINICS	*	*	*	*	*	*
NONPROFIT ORGS.	*	*	*	*	*	*
FEDERAL GOVT.	*	*	*	*	*	*
STATE/LOCAL GOVT.	*	*	*	*	*	*

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT." HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-11. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	255,900	285,100	314,300	344,000	369,300	400,400
RESEARCH & DEVELOPMENT	82,400	93,500	99,700	120,100	124,800	132,500
BASIC RESEARCH	38,100	43,600	47,900	55,200	57,100	61,500
APPLIED RESEARCH	32,900	36,400	36,800	46,500	47,400	49,100
DEVELOPMENT	11,300	13,500	15,000	18,400	20,300	22,000
MANAGEMENT/ADMIN	51,700	60,700	72,300	60,500	61,800	69,600
OF R&D	28,700	30,800	43,100	32,700	31,400	34,900
GENERAL	23,100	29,900	29,200	27,800	30,400	34,700
TEACHING	91,100	90,800	92,200	105,200	108,200	111,700
CONSULTING	5,500	6,100	9,000	12,100	12,700	14,200
SALES	1,300	1,900	2,900	2,700	3,600	4,900
PROF. SERVICES	10,300	13,300	18,300	23,100	26,300	31,600
PROD. & RELATED ACT	1,900	2,200	4,100	3,600	8,500	8,500
SCIENTISTS						
TOTAL EMPLOYED	213,500	240,000	263,900	286,900	307,800	334,500
RESEARCH & DEVELOPMENT	65,900	76,300	81,900	96,700	100,000	106,700
BASIC RESEARCH	36,500	41,900	46,000	52,400	54,000	57,800
APPLIED RESEARCH	24,900	27,800	28,800	35,800	35,500	37,700
DEVELOPMENT	4,500	6,600	7,200	8,500	10,500	11,200
MANAGEMENT/ADMIN	39,100	46,100	55,500	45,400	46,300	53,200
OF R&D	20,700	22,100	30,600	22,500	20,900	24,000
GENERAL	18,400	24,000	24,900	22,900	25,400	29,200
TEACHING	81,800	82,000	82,900	94,400	94,400	99,200
CONSULTING	3,800	4,500	6,400	8,200	9,000	10,500
SALES	1,100	1,400	2,000	1,900	2,600	3,500
PROF. SERVICES	10,200	13,100	18,000	22,300	25,900	30,700
PROD. & RELATED ACT	1,400	1,700	3,100	2,700	6,300	6,500
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	54,600	57,500	60,200	63,100	64,000	67,500
RESEARCH & DEVELOPMENT	22,700	24,800	23,900	29,600	29,100	29,900
BASIC RESEARCH	10,900	12,200	12,100	13,800	14,000	14,300
APPLIED RESEARCH	9,700	10,100	9,000	12,700	11,500	11,900
DEVELOPMENT	2,100	2,500	2,800	3,100	3,500	3,600
MANAGEMENT/ADMIN	12,200	13,200	16,200	12,000	11,800	13,000
OF R&D	8,500	8,500	12,600	8,800	8,800	9,400
GENERAL	3,700	4,700	3,500	3,200	3,100	3,600
TEACHING	15,500	14,700	14,500	15,600	14,700	15,200
CONSULTING	400	400	800	1,100	900	1,200
SALES	600	700	800	600	900	1,300
PROF. SERVICES	400	400	500	800	800	700
PROD. & RELATED ACT	700	700	1,200	1,100	2,200	2,300
CHEMISTS						
TOTAL EMPLOYED	35,800	37,400	39,700	41,900	41,300	43,700
RESEARCH & DEVELOPMENT	13,800	15,500	14,400	18,500	18,000	18,400
BASIC RESEARCH	6,100	7,000	7,000	8,100	7,900	8,000
APPLIED RESEARCH	6,300	6,800	5,500	8,300	7,600	7,800
DEVELOPMENT	1,500	1,800	2,000	2,100	2,500	2,600
MANAGEMENT/ADMIN	9,400	9,600	11,900	9,000	8,300	9,000
OF R&D	6,700	6,200	9,600	6,900	6,500	6,800
GENERAL	2,700	3,400	2,300	2,100	1,700	2,200
TEACHING	9,400	8,700	9,000	9,600	9,000	9,100
CONSULTING	300	200	500	900	700	900
SALES	500	600	700	600	700	1,100
PROF. SERVICES	300	300	300	600	500	500
PROD. & RELATED ACT	600	600	1,100	1,000	1,800	1,900
PHYSICISTS/ASTRONOMERS						
TOTAL EMPLOYED	18,800	20,100	20,600	21,200	22,700	23,700
RESEARCH & DEVELOPMENT	8,900	9,300	9,500	11,100	11,100	11,500
BASIC RESEARCH	4,800	5,200	5,100	5,800	6,100	6,400
APPLIED RESEARCH	3,400	3,300	3,600	4,300	3,900	4,100
DEVELOPMENT	700	800	800	1,000	1,000	1,100
MANAGEMENT/ADMIN	2,800	3,600	4,300	2,900	3,600	4,000
OF R&D	1,800	2,200	3,000	1,900	2,300	2,500
GENERAL	1,000	1,400	1,300	1,000	1,300	1,400
TEACHING	6,100	6,000	5,400	5,900	5,700	6,000
CONSULTING	100	200	200	200	300	300
SALES	100	100	100	100	200	300
PROF. SERVICES	100	100	100	200	300	200
PROD. & RELATED ACT	100	100	100	100	400	400
MATHEMATICAL SCIENTISTS						
TOTAL EMPLOYED	13,600	14,600	15,300	15,600	16,400	16,800
RESEARCH & DEVELOPMENT	2,700	3,300	3,600	3,400	3,400	4,000
BASIC RESEARCH	1,600	1,800	2,100	1,700	1,800	2,300
APPLIED RESEARCH	800	1,100	1,100	1,200	1,100	1,100
DEVELOPMENT	300	400	500	400	500	600
MANAGEMENT/ADMIN	1,200	1,400	1,700	1,300	1,500	1,700
OF R&D	400	300	400	300	500	400
GENERAL	800	1,100	1,300	1,000	1,000	1,300
TEACHING	9,100	9,100	8,900	9,600	9,700	9,400
CONSULTING	100	100	400	500	600	500
SALES	*	*	*	100	100	100
PROF. SERVICES	100	*	200	200	100	100
PROD. & RELATED ACT	*	*	*	*	100	100
MATHEMATICIANS						
TOTAL EMPLOYED	11,900	12,800	12,800	13,000	13,600	14,000
RESEARCH & DEVELOPMENT	2,300	2,800	3,000	2,700	2,800	3,200
BASIC RESEARCH	1,400	1,700	1,800	1,600	1,600	2,100
APPLIED RESEARCH	600	900	700	800	800	700
DEVELOPMENT	300	300	500	300	400	400
MANAGEMENT/ADMIN	1,000	1,100	1,400	1,200	1,100	1,500
OF R&D	300	200	400	200	300	300
GENERAL	700	900	1,000	900	900	1,200
TEACHING	8,100	8,200	7,700	8,300	8,300	8,200
CONSULTING	100	100	200	200	300	200
SALES	*	*	*	100	100	100
PROF. SERVICES	*	*	100	100	100	100
PROD. & RELATED ACT	*	*	*	*	*	100

* TOO FEW CASES TO ESTIMATE

TABLE B-11. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
STATISTICIANS						
TOTAL EMPLOYED	1,700	1,800	2,400	2,500	2,800	2,800
RESEARCH & DEVELOPMENT	400	500	600	600	600	800
BASIC RESEARCH	100	200	300	100	200	200
APPLIED RESEARCH	200	200	300	500	400	400
DEVELOPMENT	*	100	*	100	100	200
MANAGEMENT/ADMIN.	200	200	300	200	400	200
OF R&D	100	100	100	100	300	100
GENERAL	100	200	300	100	100	100
TEACHING	1,000	900	1,200	1,300	1,400	1,300
CONSULTING	100	100	100	300	300	200
SALES	*	*	*	*	*	*
PROF. SERVICES	*	*	100	100	*	100
PROD. & RELATED ACT.	*	*	*	*	100	100
COMPUTER/INFORMATION SPECIALISTS						
TOTAL EMPLOYED	3,500	5,800	6,700	9,100	12,200	15,000
RESEARCH & DEVELOPMENT	1,400	2,600	3,000	4,500	5,400	6,100
BASIC RESEARCH	200	300	400	600	600	1,000
APPLIED RESEARCH	400	500	500	900	900	1,000
DEVELOPMENT	800	1,800	2,100	3,000	3,900	4,100
MANAGEMENT/ADMIN.	800	1,400	1,700	1,700	2,100	2,900
OF R&D	400	700	1,000	800	1,100	1,700
GENERAL	400	700	700	900	900	1,100
TEACHING	1,100	1,200	1,100	1,500	2,400	2,800
CONSULTING	100	200	300	600	700	900
SALES	*	*	100	100	200	300
PROF. SERVICES	100	*	*	200	200	200
PROD. & RELATED ACT.	*	100	100	*	600	700
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	12,100	13,000	14,600	15,900	16,500	17,300
RESEARCH & DEVELOPMENT	4,600	4,900	5,600	6,300	6,700	6,800
BASIC RESEARCH	2,300	2,500	2,700	3,300	3,300	3,600
APPLIED RESEARCH	2,100	2,200	2,500	2,700	3,100	2,900
DEVELOPMENT	200	200	400	300	300	300
MANAGEMENT/ADMIN.	2,800	3,100	3,600	3,500	3,100	3,500
OF R&D	1,500	1,600	2,400	2,400	1,800	2,100
GENERAL	1,300	1,400	1,200	1,200	1,300	1,400
TEACHING	3,500	3,500	3,000	3,600	3,400	3,400
CONSULTING	500	400	800	1,000	1,200	1,400
SALES	*	100	100	100	100	*
PROF. SERVICES	100	100	100	300	100	300
PROD. & RELATED ACT.	*	200	100	100	400	500
EARTH SCIENTISTS						
TOTAL EMPLOYED	9,500	9,700	11,100	12,000	12,500	13,200
RESEARCH & DEVELOPMENT	3,100	3,200	3,700	4,100	4,400	4,400
BASIC RESEARCH	1,300	1,400	1,500	1,700	1,900	2,000
APPLIED RESEARCH	1,600	1,600	1,900	2,100	2,300	2,300
DEVELOPMENT	100	100	300	300	200	200
MANAGEMENT/ADMIN.	2,300	2,300	2,800	2,600	2,500	2,600
OF R&D	1,100	1,100	1,800	1,700	1,300	1,500
GENERAL	1,200	1,200	1,000	1,000	1,200	1,100
TEACHING	3,100	3,000	2,600	3,100	2,900	3,000
CONSULTING	500	300	700	900	1,100	1,300
SALES	*	*	100	*	100	*
PROF. SERVICES	100	100	100	300	100	200
PROD. & RELATED ACT.	*	100	100	100	400	400
OCEANOGRAPHERS						
TOTAL EMPLOYED	1,300	1,600	1,700	1,800	1,700	2,000
RESEARCH & DEVELOPMENT	600	800	900	1,000	1,000	1,100
BASIC RESEARCH	500	600	500	800	800	1,000
APPLIED RESEARCH	100	200	300	200	200	200
DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT/ADMIN.	300	400	400	400	300	400
OF R&D	200	300	300	300	300	200
GENERAL	100	100	200	100	100	100
TEACHING	300	300	100	200	200	200
CONSULTING	*	*	100	100	*	*
SALES	*	*	*	*	*	*
PROF. SERVICES	*	*	*	*	*	*
PROD. & RELATED ACT.	*	*	*	*	*	*
ATMOSPHERIC SCIENTISTS						
TOTAL EMPLOYED	1,300	1,700	1,800	2,100	2,200	2,100
RESEARCH & DEVELOPMENT	900	900	1,000	1,200	1,300	1,200
BASIC RESEARCH	400	500	700	800	700	600
APPLIED RESEARCH	400	400	300	400	600	500
DEVELOPMENT	100	100	*	*	100	100
MANAGEMENT/ADMIN.	200	400	300	500	300	500
OF R&D	200	200	300	400	300	300
GENERAL	*	100	*	100	*	100
TEACHING	200	300	200	300	300	200
CONSULTING	*	*	100	100	100	*
SALES	*	*	*	*	*	*
PROF. SERVICES	*	*	*	*	*	*
PROD. & RELATED ACT.	*	*	*	*	*	100
LIFE SCIENTISTS						
TOTAL EMPLOYED	63,300	70,500	78,900	84,900	92,800	101,800
RESEARCH & DEVELOPMENT	25,700	28,700	32,800	39,000	41,000	44,600
BASIC RESEARCH	17,500	20,000	23,400	27,200	28,800	31,000
APPLIED RESEARCH	7,500	7,900	8,500	10,700	10,700	11,900
DEVELOPMENT	600	800	900	1,000	1,500	1,700
MANAGEMENT/ADMIN.	10,600	13,500	15,900	12,100	13,000	15,700
OF R&D	6,200	7,300	9,200	6,700	6,200	7,300
GENERAL	4,400	6,200	6,600	5,400	6,800	8,300
TEACHING	19,900	19,000	19,300	21,700	22,500	22,400
CONSULTING	900	1,000	1,400	1,500	2,000	2,400
SALES	300	400	700	500	800	900
PROF. SERVICES	2,000	2,600	3,600	4,700	5,400	6,400
PROD. & RELATED ACT.	600	600	1,200	1,100	1,900	1,900

* TOO FEW CASES TO ESTIMATE

TABLE B-11. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
BIOLOGICAL SCIENTISTS						
TOTAL EMPLOYED	39,000	42,100	45,600	49,600	55,200	59,900
RESEARCH & DEVELOPMENT	16,900	19,200	21,800	25,600	28,100	30,100
BASIC RESEARCH	13,700	15,700	18,200	21,300	23,100	24,700
APPLIED RESEARCH	2,900	3,100	3,300	3,900	4,300	4,700
DEVELOPMENT	200	400	300	500	600	700
MANAGEMENT/ADMIN	4,700	6,000	6,700	5,100	5,900	7,300
OF R&D	2,600	3,100	4,000	2,800	2,800	3,800
GENERAL	2,100	2,800	2,700	2,300	3,000	3,500
TEACHING	14,800	13,500	13,600	15,200	15,200	15,500
CONSULTING	400	400	600	800	900	1,100
SALES	100	100	200	200	400	400
PROF. SERVICES	300	300	300	800	800	1,000
PROD. & RELATED ACT	200	200	400	400	800	900
AGRICULTURAL SCIENTISTS						
TOTAL EMPLOYED	11,000	12,100	12,800	13,500	14,500	15,500
RESEARCH & DEVELOPMENT	4,800	4,600	4,700	5,800	6,200	7,000
BASIC RESEARCH	1,200	1,200	1,200	1,500	1,700	1,900
APPLIED RESEARCH	3,400	3,200	3,300	4,200	4,200	4,800
DEVELOPMENT	200	200	200	200	400	400
MANAGEMENT/ADMIN	2,500	3,000	3,800	2,800	2,800	3,000
OF R&D	1,600	1,900	2,400	1,800	1,600	1,600
GENERAL	800	1,100	1,400	1,000	1,200	1,400
TEACHING	2,000	2,300	2,100	2,400	2,500	2,300
CONSULTING	300	300	300	300	500	600
SALES	200	200	300	300	300	300
PROF. SERVICES	200	200	300	400	300	400
PROD. & RELATED ACT	200	200	400	300	600	500
MEDICAL SCIENTISTS						
TOTAL EMPLOYED	13,300	16,400	20,500	21,800	23,100	26,500
RESEARCH & DEVELOPMENT	4,000	4,900	6,200	7,600	6,700	7,500
BASIC RESEARCH	2,600	3,000	4,000	4,400	4,000	4,300
APPLIED RESEARCH	1,200	1,600	1,800	2,700	2,200	2,400
DEVELOPMENT	200	300	400	400	500	700
MANAGEMENT/ADMIN	3,500	4,600	5,400	4,300	4,300	5,400
OF R&D	2,000	2,300	2,800	2,200	1,700	2,000
GENERAL	1,500	2,300	2,500	2,100	2,500	3,400
TEACHING	3,100	3,200	3,600	4,100	4,800	4,600
CONSULTING	200	300	500	500	600	600
SALES	*	100	100	100	100	300
PROF. SERVICES	1,500	2,100	3,000	3,600	4,300	5,000
PROD. & RELATED ACT	100	100	300	300	500	500
PSYCHOLOGISTS						
TOTAL EMPLOYED	30,000	33,700	37,800	42,800	46,600	52,200
RESEARCH & DEVELOPMENT	3,400	4,000	4,800	5,400	5,000	5,200
BASIC RESEARCH	1,900	1,900	2,500	2,500	2,300	2,300
APPLIED RESEARCH	1,300	1,800	2,000	2,500	2,400	2,400
DEVELOPMENT	200	300	300	400	300	400
MANAGEMENT/ADMIN	5,500	5,900	6,600	5,800	5,600	6,200
OF R&D	1,800	1,600	1,600	1,100	900	1,000
GENERAL	3,700	4,300	5,000	4,700	4,700	5,200
TEACHING	11,300	10,800	10,300	12,500	12,700	13,200
CONSULTING	1,200	1,500	1,500	2,100	2,100	2,100
SALES	*	100	100	100	200	300
PROF. SERVICES	7,400	9,500	12,900	15,000	18,300	21,700
PROD. & RELATED ACT	*	100	100	100	300	400
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	36,300	44,900	50,500	55,500	59,300	64,000
RESEARCH & DEVELOPMENT	5,400	7,900	8,100	8,500	9,400	10,100
BASIC RESEARCH	2,200	3,200	2,700	3,200	3,200	3,300
APPLIED RESEARCH	3,000	4,300	5,200	5,000	5,800	6,500
DEVELOPMENT	200	500	300	300	500	400
MANAGEMENT/ADMIN	5,900	7,600	9,900	8,900	9,200	10,400
OF R&D	1,900	2,100	3,300	2,500	1,600	2,100
GENERAL	4,000	5,600	6,600	6,400	7,700	8,300
TEACHING	21,400	23,700	25,900	29,900	31,100	32,800
CONSULTING	600	900	1,200	1,500	1,500	2,000
SALES	200	200	300	400	400	600
PROF. SERVICES	200	400	700	1,100	900	1,300
PROD. & RELATED ACT	100	100	200	300	700	600
ECONOMISTS						
TOTAL EMPLOYED	11,800	13,000	14,000	16,000	17,000	17,900
RESEARCH & DEVELOPMENT	2,400	3,400	3,900	3,900	3,900	4,400
BASIC RESEARCH	600	700	500	800	800	900
APPLIED RESEARCH	1,800	2,500	3,200	3,000	2,900	3,500
DEVELOPMENT	*	200	200	*	100	*
MANAGEMENT/ADMIN	2,400	2,300	2,800	2,400	2,400	2,700
OF R&D	900	700	1,300	800	500	500
GENERAL	1,500	1,500	1,600	1,600	2,000	2,100
TEACHING	5,600	5,600	5,600	7,400	7,800	7,800
CONSULTING	300	400	600	700	800	700
SALES	100	100	100	100	100	300
PROF. SERVICES	100	100	100	200	300	400
PROD. & RELATED ACT	*	*	*	*	300	300
SOCIOLOGISTS/ANTHRO.						
TOTAL EMPLOYED	7,900	9,500	10,200	11,000	12,100	12,700
RESEARCH & DEVELOPMENT	1,200	1,600	1,500	1,800	1,800	1,600
BASIC RESEARCH	700	1,000	1,000	1,000	1,100	1,100
APPLIED RESEARCH	500	600	500	800	800	500
DEVELOPMENT	*	100	*	*	*	*
MANAGEMENT/ADMIN	800	1,100	1,800	1,300	1,200	1,400
OF R&D	300	300	700	300	100	200
GENERAL	500	700	1,100	900	1,200	1,200
TEACHING	5,500	5,900	5,900	6,900	7,600	7,900
CONSULTING	*	*	*	*	100	300
SALES	*	*	*	100	100	100
PROF. SERVICES	100	*	100	100	100	300
PROD. & RELATED ACT	*	*	*	*	*	*

* TOO FEW CASES TO ESTIMATE

TABLE B-11. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
OTHER SOCIAL SCIENTISTS						
TOTAL EMPLOYED	16,600	22,500	26,300	28,500	30,300	33,400
RESEARCH & DEVELOPMENT	1,800	2,900	2,700	2,800	3,700	4,100
BASIC RESEARCH	1,000	1,500	1,200	1,400	1,300	1,400
APPLIED RESEARCH	700	1,200	1,400	1,200	2,000	2,400
DEVELOPMENT	100	200	100	200	300	300
MANAGEMENT/ADMIN	2,800	4,300	5,300	5,200	5,500	6,300
OF R&D	700	1,000	1,300	1,300	1,000	1,300
GENERAL	2,100	3,300	4,000	3,900	4,600	5,000
TEACHING	10,300	12,200	14,400	15,600	15,700	17,100
CONSULTING	300	500	600	700	600	900
SALES	100	*	200	200	200	200
PROF. SERVICES	100	300	500	800	500	600
PROD. & RELATED ACT	*	100	200	200	400	300
ENGINEERS						
TOTAL EMPLOYED	42,400	45,100	50,300	57,000	61,500	65,900
RESEARCH & DEVELOPMENT	16,400	17,200	17,800	23,400	24,700	25,800
BASIC RESEARCH	1,600	1,700	2,000	2,800	3,100	3,600
APPLIED RESEARCH	8,000	8,700	8,000	10,700	11,900	11,400
DEVELOPMENT	6,800	6,900	7,800	9,900	9,800	10,800
MANAGEMENT/ADMIN	12,600	14,600	16,800	15,200	15,500	16,400
OF R&D	8,000	8,600	12,500	10,200	10,500	10,900
GENERAL	4,700	5,900	4,300	4,900	5,000	5,500
TEACHING	9,300	8,800	9,300	10,700	11,800	12,500
CONSULTING	1,700	1,600	2,600	3,800	3,700	3,700
SALES	200	500	800	700	900	1,400
PROF. SERVICES	200	200	300	700	300	900
PROD. & RELATED ACT	400	500	1,000	900	2,100	1,900
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	2,000	2,000	2,400	2,500	3,700	3,800
RESEARCH & DEVELOPMENT	1,000	900	1,300	1,100	1,800	1,900
BASIC RESEARCH	200	100	300	200	300	300
APPLIED RESEARCH	500	500	400	600	700	700
DEVELOPMENT	300	300	500	300	800	800
MANAGEMENT/ADMIN	600	600	700	800	1,000	1,100
OF R&D	500	500	600	600	800	900
GENERAL	200	200	100	200	200	200
TEACHING	300	300	300	400	500	300
CONSULTING	*	*	*	*	100	100
SALES	*	*	*	*	*	*
PROF. SERVICES	*	*	*	100	100	100
PROD. & RELATED ACT	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	5,400	5,600	6,200	7,100	7,000	7,100
RESEARCH & DEVELOPMENT	2,000	2,100	2,200	3,600	3,000	3,200
BASIC RESEARCH	100	200	200	300	400	400
APPLIED RESEARCH	900	1,000	900	1,800	1,700	1,500
DEVELOPMENT	1,000	900	1,100	1,500	900	1,200
MANAGEMENT/ADMIN	1,900	2,200	2,500	1,600	1,700	1,800
OF R&D	1,000	1,300	1,800	1,200	1,100	1,200
GENERAL	900	900	700	400	600	500
TEACHING	800	700	600	1,000	1,100	900
CONSULTING	200	200	200	400	200	200
SALES	100	100	100	200	200	200
PROF. SERVICES	*	*	*	*	*	200
PROD. & RELATED ACT	100	200	300	200	400	300
CIVIL ENGINEERS						
TOTAL EMPLOYED	3,800	4,100	5,200	6,100	5,300	6,400
RESEARCH & DEVELOPMENT	700	900	1,000	1,200	900	1,400
BASIC RESEARCH	100	100	*	100	200	300
APPLIED RESEARCH	300	500	700	600	400	500
DEVELOPMENT	300	300	300	500	300	500
MANAGEMENT/ADMIN	900	1,100	1,100	1,200	800	1,100
OF R&D	400	400	400	400	200	500
GENERAL	600	700	600	800	600	700
TEACHING	1,400	1,500	1,600	2,200	2,100	2,200
CONSULTING	400	300	1,100	1,000	900	800
SALES	*	*	100	*	100	100
PROF. SERVICES	*	*	100	200	100	200
PROD. & RELATED ACT	*	*	100	*	200	300
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	8,500	8,300	8,600	10,600	12,700	14,200
RESEARCH & DEVELOPMENT	3,700	3,300	2,800	4,400	5,000	5,300
BASIC RESEARCH	200	200	100	300	300	300
APPLIED RESEARCH	1,500	1,200	1,200	1,700	2,100	1,900
DEVELOPMENT	2,000	1,800	1,500	2,400	2,600	2,900
MANAGEMENT/ADMIN	2,200	2,600	3,400	3,000	4,000	4,200
OF R&D	1,600	1,600	2,500	2,100	2,800	2,900
GENERAL	700	1,000	800	800	1,100	1,300
TEACHING	2,200	1,900	1,800	2,300	2,400	3,000
CONSULTING	100	100	100	400	400	400
SALES	*	100	100	200	200	400
PROF. SERVICES	*	*	*	*	*	100
PROD. & RELATED ACT	*	*	100	100	300	300
MATERIALS SCI. ENGINEERS						
TOTAL EMPLOYED	4,800	5,200	5,700	6,100	7,400	7,300
RESEARCH & DEVELOPMENT	2,100	2,400	2,100	3,000	3,600	3,300
BASIC RESEARCH	300	400	400	600	900	600
APPLIED RESEARCH	1,200	1,500	1,200	1,700	2,000	2,000
DEVELOPMENT	500	500	500	700	600	600
MANAGEMENT/ADMIN	1,500	1,600	2,200	1,600	2,300	1,900
OF R&D	1,200	1,100	1,800	1,200	1,900	1,500
GENERAL	300	400	400	400	400	400
TEACHING	800	700	800	800	800	800
CONSULTING	100	200	200	300	100	200
SALES	*	*	100	*	100	200
PROF. SERVICES	*	*	*	100	*	100
PROD. & RELATED ACT	100	100	200	100	300	300

* TOO FEW CASES TO ESTIMATE

TABLE B-11. EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	4,000	4,600	5,200	5,400	5,700	6,600
RESEARCH & DEVELOPMENT	1,500	1,500	1,600	2,200	1,900	2,500
BASIC RESEARCH	100	100	200	300	200	400
APPLIED RESEARCH	800	800	600	900	700	800
DEVELOPMENT	600	600	900	1,000	1,100	1,300
MANAGEMENT/ADMIN	1,000	1,400	1,400	1,000	1,100	1,400
OF R&D	600	800	1,000	700	600	900
GENERAL	400	600	400	400	500	500
TEACHING	1,300	1,300	1,600	1,500	1,900	2,000
CONSULTING	100	200	400	400	300	300
SALES	*	*	100	*	*	*
PROF. SERVICES	*	*	100	100	*	100
PROD. & RELATED ACT	*	100	*	100	300	100
NUCLEAR ENGINEERS						
TOTAL EMPLOYED	1,700	1,800	2,300	2,100	2,300	2,400
RESEARCH & DEVELOPMENT	600	600	900	900	1,100	1,100
BASIC RESEARCH	*	*	*	*	*	*
APPLIED RESEARCH	300	300	400	500	600	600
DEVELOPMENT	300	300	400	400	500	500
MANAGEMENT/ADMIN	600	700	800	700	500	600
OF R&D	400	500	700	500	300	300
GENERAL	200	200	100	100	300	300
TEACHING	300	200	300	200	300	100
CONSULTING	100	100	100	200	200	300
SALES	*	*	*	*	*	*
PROF. SERVICES	*	*	*	*	*	*
PROD. & RELATED ACT	100	*	*	*	*	*
SYSTEMS DESIGN ENGINEERS						
TOTAL EMPLOYED	2,400	3,600	4,900	5,300	3,900	3,700
RESEARCH & DEVELOPMENT	1,000	1,400	2,300	2,400	1,800	1,900
BASIC RESEARCH	*	100	200	100	*	100
APPLIED RESEARCH	400	500	700	700	400	600
DEVELOPMENT	600	900	1,400	1,700	1,400	1,100
MANAGEMENT/ADMIN	700	1,300	1,500	1,500	800	800
OF R&D	400	900	1,200	1,100	700	600
GENERAL	300	500	300	400	100	200
TEACHING	400	500	600	600	600	400
CONSULTING	200	200	100	500	300	400
SALES	*	*	*	100	100	*
PROF. SERVICES	*	*	*	100	*	*
PROD. & RELATED ACT	*	*	100	*	*	100
OTHER ENGINEERS						
TOTAL EMPLOYED	9,800	9,900	9,900	11,800	13,600	14,300
RESEARCH & DEVELOPMENT	3,900	4,100	3,700	4,500	5,600	5,400
BASIC RESEARCH	500	500	600	800	800	900
APPLIED RESEARCH	2,100	2,400	1,800	2,300	3,300	2,600
DEVELOPMENT	1,300	1,300	1,300	1,300	1,600	1,800
MANAGEMENT/ADMIN	3,100	3,000	3,300	3,700	3,300	3,500
OF R&D	1,900	1,600	2,400	2,400	2,100	2,100
GENERAL	1,200	1,400	900	1,300	1,200	1,400
TEACHING	1,900	1,600	1,600	1,900	2,100	2,600
CONSULTING	400	400	400	800	1,100	1,000
SALES	*	100	200	100	200	300
PROF. SERVICES	*	100	*	200	100	200
PROD. & RELATED ACT	100	100	300	400	600	600

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-12. EMPLOYED MEN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	233,900	257,500	280,900	303,000	320,500	341,900
RESEARCH & DEVELOPMENT	76,400	85,900	90,300	107,700	110,200	116,100
MANAGEMENT OF R&D	27,800	29,500	41,000	31,200	30,000	32,800
GENERAL MANAGEMENT	21,500	27,700	26,200	24,300	26,500	29,700
TEACHING	81,700	80,400	80,800	91,200	92,700	94,100
CONSULTING	5,100	5,700	8,400	11,000	11,600	12,700
SCIENTISTS						
TOTAL EMPLOYED	191,700	212,700	231,000	246,700	260,000	277,500
RESEARCH & DEVELOPMENT	60,100	68,800	72,800	84,700	86,000	91,000
MANAGEMENT OF R&D	19,800	20,900	28,600	21,000	19,600	22,100
GENERAL MANAGEMENT	16,900	21,800	21,900	19,400	21,600	24,300
TEACHING	72,400	71,700	71,600	80,600	81,000	81,900
CONSULTING	3,400	4,100	5,800	7,200	7,900	9,100
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	52,100	54,600	57,100	59,300	59,800	62,800
RESEARCH & DEVELOPMENT	21,800	23,600	22,700	27,800	27,100	27,900
MANAGEMENT OF R&D	8,400	8,300	12,300	8,600	8,500	9,100
GENERAL MANAGEMENT	3,600	4,500	3,300	2,900	2,900	3,400
TEACHING	14,500	13,700	13,400	14,400	13,500	13,900
CONSULTING	400	400	700	1,100	900	1,200
MATH SCIENTISTS						
TOTAL EMPLOYED	12,700	13,600	14,100	14,300	15,000	15,200
RESEARCH & DEVELOPMENT	2,600	3,100	3,500	3,100	3,100	3,700
MANAGEMENT OF R&D	400	300	400	300	500	300
GENERAL MANAGEMENT	800	1,000	1,200	1,000	900	1,300
TEACHING	8,400	8,300	8,100	8,700	8,800	8,500
CONSULTING	100	100	300	400	500	400
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	3,400	5,500	6,300	8,400	10,900	13,300
RESEARCH & DEVELOPMENT	1,300	2,500	2,900	4,200	4,900	5,500
MANAGEMENT OF R&D	400	700	900	800	1,000	1,600
GENERAL MANAGEMENT	400	700	700	900	800	1,000
TEACHING	1,000	1,100	1,000	1,400	2,200	2,600
CONSULTING	100	100	300	500	600	800
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	11,800	12,600	14,000	15,100	15,600	16,200
RESEARCH & DEVELOPMENT	4,400	4,700	5,300	5,900	6,300	6,300
MANAGEMENT OF R&D	1,500	1,600	2,300	2,300	1,800	2,000
GENERAL MANAGEMENT	1,300	1,400	1,100	1,100	1,300	1,300
TEACHING	3,400	3,400	2,800	3,400	3,300	3,200
CONSULTING	500	400	800	1,000	1,100	1,400
LIFE SCIENTISTS						
TOTAL EMPLOYED	55,800	61,400	67,500	71,600	76,600	82,100
RESEARCH & DEVELOPMENT	22,300	24,600	27,700	32,500	33,400	35,800
MANAGEMENT OF R&D	5,900	6,900	8,500	6,200	5,800	6,700
GENERAL MANAGEMENT	4,100	5,600	5,800	4,500	5,700	6,700
TEACHING	17,300	16,200	16,000	18,100	18,000	17,400
CONSULTING	800	900	1,300	1,400	1,700	2,000
PSYCHOLOGISTS						
TOTAL EMPLOYED	23,700	26,100	28,700	31,100	33,000	35,600
RESEARCH & DEVELOPMENT	2,800	3,200	3,800	4,200	3,700	3,700
MANAGEMENT OF R&D	1,600	1,300	1,300	800	800	700
GENERAL MANAGEMENT	3,000	3,600	4,000	3,500	3,600	3,700
TEACHING	9,100	8,600	8,000	9,300	9,300	9,400
CONSULTING	1,000	1,200	1,200	1,600	1,600	1,600
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	32,200	39,000	43,300	47,000	49,300	52,200
RESEARCH & DEVELOPMENT	4,800	7,000	6,900	7,000	7,400	8,100
MANAGEMENT OF R&D	1,700	1,800	2,900	2,100	1,300	1,700
GENERAL MANAGEMENT	3,800	5,000	5,700	5,500	6,500	6,800
TEACHING	18,800	20,400	22,300	25,200	26,100	26,900
CONSULTING	600	900	1,100	1,300	1,300	1,700
ENGINEERS						
TOTAL EMPLOYED	42,200	44,800	49,800	56,300	60,500	64,400
RESEARCH & DEVELOPMENT	16,300	17,000	17,500	23,000	24,200	25,100
MANAGEMENT OF R&D	7,900	8,600	12,400	10,100	10,400	10,800
GENERAL MANAGEMENT	4,600	5,900	4,300	4,900	4,900	5,400
TEACHING	9,300	8,800	9,300	10,600	11,700	12,200
CONSULTING	1,700	1,600	2,600	3,800	3,700	3,700
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	2,000	2,000	2,300	2,500	3,600	3,700
RESEARCH & DEVELOPMENT	1,000	900	1,200	1,100	1,800	1,800
MANAGEMENT OF R&D	500	500	600	600	800	900
GENERAL MANAGEMENT	200	200	100	200	200	200
TEACHING	300	300	300	400	500	300
CONSULTING	*	*	*	*	100	100
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	5,300	5,600	6,100	7,100	6,900	7,000
RESEARCH & DEVELOPMENT	2,000	2,000	2,100	3,600	2,900	3,100
MANAGEMENT OF R&D	1,000	1,300	1,800	1,200	1,100	1,200
GENERAL MANAGEMENT	900	900	700	400	600	500
TEACHING	800	700	600	1,000	1,100	900
CONSULTING	200	200	200	400	200	200
CIVIL ENGINEERS						
TOTAL EMPLOYED	3,800	4,100	5,100	6,000	5,200	6,300
RESEARCH & DEVELOPMENT	700	900	900	1,200	900	1,300
MANAGEMENT OF R&D	400	400	400	400	200	500
GENERAL MANAGEMENT	600	700	600	800	600	700
TEACHING	1,400	1,500	1,600	2,100	2,100	2,200
CONSULTING	400	300	1,100	900	900	800

* TOO FEW CASES TO ESTIMATE

TABLE B-12. EMPLOYED MEN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	8,500	8,200	8,500	10,500	12,300	13,900
RESEARCH & DEVELOPMENT	3,600	3,200	2,700	4,300	4,900	5,100
MANAGEMENT OF R&D	1,500	1,600	2,500	2,100	2,800	2,900
GENERAL MANAGEMENT	700	1,000	800	800	1,100	1,300
TEACHING	2,200	1,900	1,800	2,300	2,400	3,000
CONSULTING	100	100	100	400	400	400
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	4,000	4,600	5,200	5,300	5,600	6,500
RESEARCH & DEVELOPMENT	1,500	1,500	1,600	2,200	1,900	2,500
MANAGEMENT OF R&D	600	800	1,000	700	600	900
GENERAL MANAGEMENT	400	600	400	400	500	500
TEACHING	1,300	1,300	1,600	1,500	1,800	2,000
CONSULTING	100	200	400	400	300	300
OTHER ENGINEERS						
TOTAL EMPLOYED	18,600	20,300	22,500	24,900	26,700	26,900
RESEARCH & DEVELOPMENT	7,400	8,500	8,800	10,600	11,900	11,200
MANAGEMENT OF R&D	3,900	4,000	6,100	5,100	5,000	4,400
GENERAL MANAGEMENT	2,000	2,600	1,700	2,300	2,000	2,200
TEACHING	3,300	3,100	3,300	3,400	3,700	3,900
CONSULTING	800	800	800	1,700	1,700	1,800

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-13. EMPLOYED WOMEN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	22,100	27,600	33,400	41,000	48,800	58,500
RESEARCH & DEVELOPMENT	6,000	7,600	9,400	12,300	14,600	16,500
MANAGEMENT OF R&D	900	1,200	2,000	1,500	1,400	2,100
GENERAL MANAGEMENT	1,500	2,200	3,100	3,500	3,800	5,000
TEACHING	9,400	10,400	11,400	14,000	15,500	17,600
CONSULTING	400	500	600	1,100	1,200	1,400
SCIENTISTS						
TOTAL EMPLOYED	21,800	27,300	32,900	40,200	47,800	57,000
RESEARCH & DEVELOPMENT	5,900	7,400	9,100	11,900	14,000	15,800
MANAGEMENT OF R&D	900	1,200	2,000	1,500	1,300	1,900
GENERAL MANAGEMENT	1,500	2,200	3,100	3,500	3,800	4,900
TEACHING	9,400	10,400	11,300	13,800	15,400	17,400
CONSULTING	400	500	600	1,000	1,100	1,400
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	2,500	2,900	3,100	3,800	4,200	4,700
RESEARCH & DEVELOPMENT	1,000	1,200	1,300	1,700	1,900	2,000
MANAGEMENT OF R&D	100	200	300	200	300	300
GENERAL MANAGEMENT	100	200	200	200	200	200
TEACHING	1,100	1,100	1,000	1,200	1,200	1,300
CONSULTING	*	*	*	*	*	100
MATH SCIENTISTS						
TOTAL EMPLOYED	900	1,000	1,100	1,300	1,400	1,600
RESEARCH & DEVELOPMENT	100	200	200	200	300	300
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	100	*	100	100
TEACHING	700	700	800	900	900	1,000
CONSULTING	*	*	*	100	100	100
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	100	200	400	700	1,300	1,600
RESEARCH & DEVELOPMENT	100	100	200	400	500	600
MANAGEMENT OF R&D	*	*	*	*	100	200
GENERAL MANAGEMENT	*	*	*	*	100	100
TEACHING	*	100	100	100	200	200
CONSULTING	*	*	*	*	100	100
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	300	400	600	900	900	1,100
RESEARCH & DEVELOPMENT	100	200	300	400	400	500
MANAGEMENT OF R&D	*	*	100	100	100	100
GENERAL MANAGEMENT	*	*	100	100	100	100
TEACHING	100	100	100	200	200	200
CONSULTING	*	*	*	100	100	100
LIFE SCIENTISTS						
TOTAL EMPLOYED	7,500	9,100	11,300	13,300	16,200	19,700
RESEARCH & DEVELOPMENT	3,400	4,100	5,000	6,600	7,600	8,800
MANAGEMENT OF R&D	300	400	800	500	400	700
GENERAL MANAGEMENT	400	700	800	900	1,100	1,600
TEACHING	2,600	2,800	3,300	3,600	4,500	5,000
CONSULTING	100	100	100	200	300	300
PSYCHOLOGISTS						
TOTAL EMPLOYED	6,300	7,600	9,200	11,700	13,700	16,600
RESEARCH & DEVELOPMENT	700	800	1,000	1,200	1,400	1,500
MANAGEMENT OF R&D	200	300	300	200	100	300
GENERAL MANAGEMENT	700	700	1,000	1,200	1,100	1,400
TEACHING	2,200	2,200	2,400	3,200	3,500	3,800
CONSULTING	200	300	300	500	500	500
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	4,100	6,000	7,100	8,600	10,100	11,800
RESEARCH & DEVELOPMENT	600	900	1,200	1,400	2,000	2,000
MANAGEMENT OF R&D	200	200	400	400	300	400
GENERAL MANAGEMENT	300	600	900	1,000	1,200	1,400
TEACHING	2,600	3,300	3,600	4,600	5,000	5,900
CONSULTING	*	*	100	200	200	200
ENGINEERS						
TOTAL EMPLOYED	200	300	500	800	1,100	1,500
RESEARCH & DEVELOPMENT	100	100	300	400	600	700
MANAGEMENT OF R&D	*	*	100	100	100	200
GENERAL MANAGEMENT	*	*	*	*	*	100
TEACHING	*	100	100	100	200	300
CONSULTING	*	*	*	100	*	*
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	100	100
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	*	*	*	100	100	100
RESEARCH & DEVELOPMENT	*	*	*	*	100	100
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	*	*	100	100	100	100
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*

* TOO FEW CASES TO ESTIMATE

TABLE B-13. EMPLOYED WOMEN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	*	*	100	100	200	300
RESEARCH & DEVELOPMENT	*	*	*	100	100	200
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	100
CONSULTING	*	*	*	*	*	*
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	100	100
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
OTHER ENGINEERS						
TOTAL EMPLOYED	100	200	300	400	500	800
RESEARCH & DEVELOPMENT	100	100	100	200	300	400
MANAGEMENT OF R&D	*	*	*	*	100	100
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	100	100
CONSULTING	*	*	*	*	*	*

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-14. EMPLOYED WHITE DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	232,800	258,300	285,000	309,100	329,900	355,100
RESEARCH & DEVELOPMENT	72,900	81,600	88,900	104,200	107,300	113,100
MANAGEMENT OF R&D	26,800	28,600	37,800	29,500	28,600	30,800
GENERAL MANAGEMENT	21,800	28,000	27,600	26,300	28,400	32,400
TEACHING	83,600	83,300	84,400	95,900	97,800	100,200
CONSULTING	5,000	5,600	7,900	10,800	11,300	12,800
SCIENTISTS						
TOTAL EMPLOYED	195,800	219,600	243,000	261,900	280,000	302,500
RESEARCH & DEVELOPMENT	59,400	68,000	74,900	86,400	89,200	94,100
MANAGEMENT OF R&D	19,400	20,600	27,500	20,500	19,300	21,800
GENERAL MANAGEMENT	17,400	22,600	23,500	21,600	23,900	27,300
TEACHING	75,300	75,600	76,300	86,300	87,800	89,900
CONSULTING	3,600	4,200	5,900	7,800	8,300	9,700
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	49,800	52,000	54,600	56,200	56,800	59,600
RESEARCH & DEVELOPMENT	20,400	22,000	21,700	25,400	25,100	25,700
MANAGEMENT OF R&D	8,000	7,900	11,100	8,000	8,100	8,400
GENERAL MANAGEMENT	3,500	4,400	3,400	2,900	2,800	3,300
TEACHING	14,200	13,400	13,100	14,400	13,300	13,700
CONSULTING	400	400	800	1,100	800	1,100
MATH SCIENTISTS						
TOTAL EMPLOYED	12,300	13,200	13,700	14,000	14,600	14,900
RESEARCH & DEVELOPMENT	2,400	2,900	3,200	3,100	3,100	3,600
MANAGEMENT OF R&D	400	300	400	300	400	300
GENERAL MANAGEMENT	800	1,000	1,200	1,000	900	1,300
TEACHING	8,200	8,200	8,100	8,600	8,700	8,300
CONSULTING	100	100	300	400	500	400
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	3,200	5,000	6,100	8,100	11,000	13,100
RESEARCH & DEVELOPMENT	1,300	2,200	2,800	4,000	4,800	5,200
MANAGEMENT OF R&D	400	700	900	700	1,000	1,400
GENERAL MANAGEMENT	400	600	600	900	900	1,000
TEACHING	900	1,000	1,000	1,300	2,100	2,600
CONSULTING	100	100	200	500	700	900
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	11,400	12,100	13,800	15,000	15,500	15,800
RESEARCH & DEVELOPMENT	4,200	4,400	5,200	6,000	6,300	6,100
MANAGEMENT OF R&D	1,400	1,500	2,200	2,200	1,700	1,900
GENERAL MANAGEMENT	1,300	1,400	1,200	1,200	1,300	1,400
TEACHING	3,400	3,400	2,900	3,400	3,300	3,200
CONSULTING	400	300	800	1,000	1,100	1,300
LIFE SCIENTISTS						
TOTAL EMPLOYED	57,700	64,200	71,900	77,100	83,700	92,000
RESEARCH & DEVELOPMENT	22,900	25,400	29,700	35,000	36,400	39,400
MANAGEMENT OF R&D	5,800	6,800	8,300	6,100	5,700	6,800
GENERAL MANAGEMENT	4,200	5,800	6,200	5,100	6,300	7,800
TEACHING	18,400	17,700	17,700	19,900	20,400	20,700
CONSULTING	800	1,000	1,300	1,500	1,800	2,200
PSYCHOLOGISTS						
TOTAL EMPLOYED	28,300	31,900	36,500	41,000	44,500	49,500
RESEARCH & DEVELOPMENT	3,300	3,800	4,600	5,100	4,900	5,000
MANAGEMENT OF R&D	1,600	1,500	1,500	1,000	800	900
GENERAL MANAGEMENT	3,500	4,100	4,700	4,500	4,500	4,900
TEACHING	10,700	10,200	10,000	11,900	12,100	12,400
CONSULTING	1,200	1,400	1,400	2,000	2,000	2,000
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	33,100	41,100	46,400	50,500	53,800	57,700
RESEARCH & DEVELOPMENT	4,900	7,200	7,800	7,900	8,700	9,200
MANAGEMENT OF R&D	1,800	1,900	3,000	2,300	1,500	2,000
GENERAL MANAGEMENT	3,700	5,200	6,100	6,000	7,200	7,600
TEACHING	19,500	21,700	23,500	26,800	27,900	29,000
CONSULTING	600	900	1,100	1,400	1,400	1,800
ENGINEERS						
TOTAL EMPLOYED	36,900	38,600	42,000	47,200	49,900	52,600
RESEARCH & DEVELOPMENT	13,500	13,600	14,000	17,700	18,100	19,100
MANAGEMENT OF R&D	7,400	8,000	10,300	8,900	9,300	8,900
GENERAL MANAGEMENT	4,400	5,500	4,200	4,700	4,500	5,100
TEACHING	8,200	7,700	8,200	9,600	10,100	10,300
CONSULTING	1,400	1,400	2,000	3,000	3,000	3,100
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	1,800	1,800	2,100	2,200	3,100	3,300
RESEARCH & DEVELOPMENT	900	800	1,100	800	1,400	1,400
MANAGEMENT OF R&D	400	400	600	600	800	900
GENERAL MANAGEMENT	200	200	100	200	200	200
TEACHING	200	300	300	400	500	300
CONSULTING	*	*	*	*	100	100
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	4,700	4,700	5,000	5,600	5,400	5,100
RESEARCH & DEVELOPMENT	1,700	1,500	1,500	2,400	2,100	1,900
MANAGEMENT OF R&D	1,000	1,100	1,400	1,000	900	900
GENERAL MANAGEMENT	800	800	600	400	600	500
TEACHING	700	600	500	800	800	700
CONSULTING	200	200	200	400	200	200
CIVIL ENGINEERS						
TOTAL EMPLOYED	3,100	3,300	3,900	4,800	4,200	5,100
RESEARCH & DEVELOPMENT	500	500	500	800	700	1,000
MANAGEMENT OF R&D	400	300	300	300	100	400
GENERAL MANAGEMENT	500	600	600	700	500	700
TEACHING	1,200	1,200	1,500	2,000	1,900	2,000
CONSULTING	300	300	600	500	500	500

* TOO FEW CASES TO ESTIMATE

TABLE B-14. EMPLOYED WHITE DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	7,300	7,200	7,300	8,900	10,300	11,400
RESEARCH & DEVELOPMENT	2,900	2,700	2,100	3,300	3,600	3,800
MANAGEMENT OF R&D	1,500	1,500	2,200	1,900	2,500	2,400
GENERAL MANAGEMENT	600	900	800	800	1,000	1,200
TEACHING	1,900	1,700	1,700	2,000	2,100	2,500
CONSULTING	100	100	100	300	400	300
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	3,400	3,800	4,100	4,300	4,400	5,100
RESEARCH & DEVELOPMENT	1,200	1,100	1,100	1,600	1,300	1,700
MANAGEMENT OF R&D	600	700	800	500	500	700
GENERAL MANAGEMENT	300	500	400	400	400	500
TEACHING	1,100	1,100	1,300	1,400	1,500	1,600
CONSULTING	100	200	300	300	300	300
OTHER ENGINEERS						
TOTAL EMPLOYED	16,700	17,900	19,700	21,400	22,400	22,700
RESEARCH & DEVELOPMENT	6,400	6,900	7,700	8,900	9,100	9,300
MANAGEMENT OF R&D	3,600	3,800	5,100	4,300	4,500	3,600
GENERAL MANAGEMENT	1,900	2,400	1,700	2,200	1,800	2,100
TEACHING	3,000	2,800	2,900	3,100	3,300	3,200
CONSULTING	700	700	800	1,300	1,500	1,600

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-15. EMPLOYED BLACK DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	2,500	2,700	3,200	4,200	5,000	5,700
RESEARCH & DEVELOPMENT	500	600	600	800	1,000	1,100
MANAGEMENT OF R&D	200	300	400	300	300	300
GENERAL MANAGEMENT	400	400	500	700	900	800
TEACHING	1,100	1,000	1,200	1,700	1,800	2,200
CONSULTING	*	*	100	100	200	200
SCIENTISTS						
TOTAL EMPLOYED	2,400	2,600	3,100	4,000	4,500	5,200
RESEARCH & DEVELOPMENT	400	600	600	700	800	900
MANAGEMENT OF R&D	200	300	400	300	200	200
GENERAL MANAGEMENT	400	400	500	600	800	800
TEACHING	1,100	900	1,200	1,600	1,700	2,000
CONSULTING	*	*	100	100	100	200
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	500	500	400	600	700	500
RESEARCH & DEVELOPMENT	200	200	100	200	200	300
MANAGEMENT OF R&D	100	100	100	100	100	100
GENERAL MANAGEMENT	*	*	*	100	100	*
TEACHING	200	100	100	200	200	100
CONSULTING	*	*	*	*	*	*
MATH SCIENTISTS						
TOTAL EMPLOYED	100	100	100	200	200	200
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	100	100	100	100	100	100
CONSULTING	*	*	*	*	*	*
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	*	*	*	*	*	100
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	*	*	100	*	*	100
RESEARCH & DEVELOPMENT	*	*	100	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
LIFE SCIENTISTS						
TOTAL EMPLOYED	700	800	900	1,000	1,100	1,400
RESEARCH & DEVELOPMENT	200	200	200	300	300	300
MANAGEMENT OF R&D	100	100	100	100	100	100
GENERAL MANAGEMENT	100	100	100	100	300	300
TEACHING	300	200	400	400	400	500
CONSULTING	*	*	*	*	*	100
PSYCHOLOGISTS						
TOTAL EMPLOYED	400	500	600	800	1,000	1,200
RESEARCH & DEVELOPMENT	*	100	100	100	100	100
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	100	100	100	100	100	200
TEACHING	200	200	200	300	300	300
CONSULTING	*	*	*	100	100	100
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	600	700	1,000	1,300	1,500	1,700
RESEARCH & DEVELOPMENT	100	100	100	100	200	100
MANAGEMENT OF R&D	*	*	100	100	*	*
GENERAL MANAGEMENT	100	100	200	300	300	300
TEACHING	300	300	400	600	700	1,000
CONSULTING	*	*	*	*	*	*
ENGINEERS						
TOTAL EMPLOYED	100	100	100	300	400	500
RESEARCH & DEVELOPMENT	*	*	*	100	200	200
MANAGEMENT OF R&D	*	*	*	100	*	*
GENERAL MANAGEMENT	*	*	*	*	100	*
TEACHING	*	*	*	*	100	100
CONSULTING	*	*	*	*	*	*
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	*	*
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	*	100
RESEARCH & DEVELOPMENT	*	*	*	*	*	100
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	*	100
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*

* TOO FEW CASES TO ESTIMATE

TABLE B-15. EMPLOYED BLACK DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	100	100
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	100	*
CONSULTING	*	*	*	*	*	*
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	100	100
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	100	*
TEACHING	*	*	*	*	*	100
CONSULTING	*	*	*	*	*	*
OTHER ENGINEERS						
TOTAL EMPLOYED	*	100	100	100	200	200
RESEARCH & DEVELOPMENT	*	*	*	100	100	100
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-16. EMPLOYED ASIAN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	13,600	16,300	22,900	27,400	29,900	34,500
RESEARCH & DEVELOPMENT	6,900	8,800	9,600	14,100	15,400	17,300
MANAGEMENT OF R&D	900	1,200	4,600	2,600	2,300	3,500
GENERAL MANAGEMENT	400	800	900	700	800	1,000
TEACHING	3,900	3,800	5,400	6,300	7,100	7,600
CONSULTING	300	400	900	1,000	1,000	1,000
SCIENTISTS						
TOTAL EMPLOYED	9,300	11,200	15,000	18,300	19,300	22,700
RESEARCH & DEVELOPMENT	4,400	5,800	5,900	8,800	9,200	11,000
MANAGEMENT OF R&D	500	700	2,500	1,400	1,100	1,700
GENERAL MANAGEMENT	300	500	800	500	500	800
TEACHING	3,100	3,000	4,400	5,400	5,700	5,900
CONSULTING	100	200	300	200	300	400
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	3,000	3,400	4,700	5,800	5,700	6,600
RESEARCH & DEVELOPMENT	1,700	2,100	2,000	3,800	3,400	3,800
MANAGEMENT OF R&D	200	300	1,400	600	500	800
GENERAL MANAGEMENT	100	100	100	100	100	200
TEACHING	700	700	1,000	800	1,000	1,000
CONSULTING	*	*	*	*	100	100
MATH SCIENTISTS						
TOTAL EMPLOYED	700	800	1,100	1,200	1,400	1,400
RESEARCH & DEVELOPMENT	200	200	400	200	300	300
MANAGEMENT OF R&D	*	*	100	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	500	500	600	800	800	900
CONSULTING	*	*	*	*	*	*
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	200	600	600	900	900	1,600
RESEARCH & DEVELOPMENT	100	400	200	500	500	700
MANAGEMENT OF R&D	*	*	*	*	100	300
GENERAL MANAGEMENT	*	*	100	*	*	100
TEACHING	100	100	100	200	300	200
CONSULTING	*	*	100	*	*	*
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	300	600	500	700	800	1,100
RESEARCH & DEVELOPMENT	200	300	300	300	300	600
MANAGEMENT OF R&D	*	*	100	200	100	100
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	100	100	*	100	100	100
CONSULTING	*	100	*	100	*	*
LIFE SCIENTISTS						
TOTAL EMPLOYED	3,400	4,000	5,400	6,300	6,800	7,400
RESEARCH & DEVELOPMENT	2,000	2,400	2,700	3,600	4,000	4,600
MANAGEMENT OF R&D	200	300	700	400	300	300
GENERAL MANAGEMENT	100	200	200	100	100	200
TEACHING	700	600	1,100	1,300	1,300	1,100
CONSULTING	100	*	100	*	100	100
PSYCHOLOGISTS						
TOTAL EMPLOYED	300	300	400	600	700	800
RESEARCH & DEVELOPMENT	*	*	100	100	100	100
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	100	*	*	*
TEACHING	100	100	100	200	200	200
CONSULTING	*	*	*	*	*	*
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	1,400	1,500	2,300	3,000	3,100	3,800
RESEARCH & DEVELOPMENT	200	300	200	300	500	800
MANAGEMENT OF R&D	*	100	100	100	*	*
GENERAL MANAGEMENT	100	100	200	200	100	200
TEACHING	900	900	1,500	1,900	1,900	2,400
CONSULTING	*	*	100	*	100	100
ENGINEERS						
TOTAL EMPLOYED	4,300	5,000	7,900	9,000	10,500	11,900
RESEARCH & DEVELOPMENT	2,500	3,000	3,700	5,300	6,300	6,300
MANAGEMENT OF R&D	300	500	2,100	1,200	1,200	1,800
GENERAL MANAGEMENT	200	300	100	200	300	200
TEACHING	700	800	1,000	900	1,500	1,700
CONSULTING	200	200	600	800	600	600
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	200	100	200	300	500	500
RESEARCH & DEVELOPMENT	100	100	200	200	400	500
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	500	700	1,200	1,600	1,500	1,900
RESEARCH & DEVELOPMENT	300	500	700	1,200	900	1,200
MANAGEMENT OF R&D	*	100	400	200	200	300
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	100	100	100	200	300	200
CONSULTING	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	600	700	1,200	1,200	1,100	1,200
RESEARCH & DEVELOPMENT	200	300	400	500	200	400
MANAGEMENT OF R&D	*	*	100	100	*	100
GENERAL MANAGEMENT	*	100	*	*	100	*
TEACHING	100	200	100	100	200	200
CONSULTING	100	100	500	400	400	300

* TOO FEW CASES TO ESTIMATE

TABLE B-16. EMPLOYED ASIAN DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	900	800	1,300	1,600	2,100	2,600
RESEARCH & DEVELOPMENT	700	500	700	1,000	1,400	1,400
MANAGEMENT OF R&D	100	100	400	200	300	500
GENERAL MANAGEMENT	*	*	100	*	100	100
TEACHING	200	200	100	300	200	300
CONSULTING	*	*	*	*	*	100
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	600	800	1,200	1,000	1,200	1,400
RESEARCH & DEVELOPMENT	300	300	600	700	500	700
MANAGEMENT OF R&D	100	100	200	200	100	100
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	100	200	300	100	300	400
CONSULTING	*	*	100	100	*	100
OTHER ENGINEERS						
TOTAL EMPLOYED	1,500	1,900	2,800	3,400	4,200	4,400
RESEARCH & DEVELOPMENT	900	1,300	1,200	1,800	2,700	2,100
MANAGEMENT OF R&D	200	100	1,000	500	500	800
GENERAL MANAGEMENT	100	100	*	100	100	100
TEACHING	200	200	400	200	400	600
CONSULTING	*	100	*	300	100	100

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-17. EMPLOYED HISPANIC DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ALL FIELDS						
TOTAL EMPLOYED	2,000	2,700	4,100	4,800	5,400	5,900
RESEARCH & DEVELOPMENT	600	900	1,700	1,900	1,900	2,000
MANAGEMENT OF R&D	200	200	400	400	300	400
GENERAL MANAGEMENT	100	300	300	400	400	600
TEACHING	700	900	1,200	1,200	1,500	1,200
CONSULTING	100	100	100	400	200	400
SCIENTISTS						
TOTAL EMPLOYED	1,700	2,300	3,400	4,100	4,500	5,100
RESEARCH & DEVELOPMENT	500	700	1,500	1,600	1,600	1,800
MANAGEMENT OF R&D	100	100	300	300	200	300
GENERAL MANAGEMENT	100	200	200	300	400	500
TEACHING	600	800	900	1,000	1,200	1,100
CONSULTING	100	100	100	200	200	200
PHYSICAL SCIENTISTS						
TOTAL EMPLOYED	400	500	900	900	900	900
RESEARCH & DEVELOPMENT	200	200	500	300	300	400
MANAGEMENT OF R&D	*	100	100	100	100	200
GENERAL MANAGEMENT	*	100	100	*	*	*
TEACHING	100	200	200	300	300	200
CONSULTING	*	*	*	*	*	*
MATH SCIENTISTS						
TOTAL EMPLOYED	100	200	200	200	200	300
RESEARCH & DEVELOPMENT	*	*	100	100	*	100
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	100	100	100	100	100	100
CONSULTING	*	*	*	*	*	*
COMPUTER SPECIALISTS						
TOTAL EMPLOYED	*	*	100	100	200	200
RESEARCH & DEVELOPMENT	*	*	*	*	100	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	100	*
TEACHING	*	*	*	*	100	100
CONSULTING	*	*	*	*	*	100
ENVIRONMENTAL SCIENTISTS						
TOTAL EMPLOYED	100	100	200	200	200	300
RESEARCH & DEVELOPMENT	*	*	100	100	100	100
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
LIFE SCIENTISTS						
TOTAL EMPLOYED	600	700	1,000	1,200	1,300	1,400
RESEARCH & DEVELOPMENT	300	300	500	700	700	700
MANAGEMENT OF R&D	*	*	100	100	100	100
GENERAL MANAGEMENT	*	*	100	100	100	200
TEACHING	200	200	200	200	100	200
CONSULTING	*	*	*	*	*	*
PSYCHOLOGISTS						
TOTAL EMPLOYED	200	300	500	600	700	1,000
RESEARCH & DEVELOPMENT	*	*	100	100	100	100
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	100	100	100	100
TEACHING	*	100	100	100	100	100
CONSULTING	*	*	100	100	100	100
SOCIAL SCIENTISTS						
TOTAL EMPLOYED	300	500	600	800	1,000	1,100
RESEARCH & DEVELOPMENT	*	100	200	300	300	400
MANAGEMENT OF R&D	*	*	100	*	*	*
GENERAL MANAGEMENT	*	100	*	100	100	100
TEACHING	100	200	200	300	400	300
CONSULTING	*	*	*	100	100	100
ENGINEERS						
TOTAL EMPLOYED	300	400	600	800	1,000	800
RESEARCH & DEVELOPMENT	100	100	200	300	300	200
MANAGEMENT OF R&D	100	100	100	100	100	*
GENERAL MANAGEMENT	*	100	100	100	*	100
TEACHING	100	100	200	100	400	200
CONSULTING	*	*	*	200	*	100
AERO/ASTRO ENGINEERS						
TOTAL EMPLOYED	*	*	*	*	*	*
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
CHEMICAL ENGINEERS						
TOTAL EMPLOYED	*	100	100	*	100	100
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	100	*	100	100
CONSULTING	*	*	*	*	*	*
CIVIL ENGINEERS						
TOTAL EMPLOYED	100	*	*	100	100	100
RESEARCH & DEVELOPMENT	*	*	*	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	100	*	*

* TOO FEW CASES TO ESTIMATE

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TABLE B-17. EMPLOYED HISPANIC DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975-85
CONTINUED

FIELD AND PRIMARY WORK ACTIVITY	1975	1977	1979	1981	1983	1985
ELEC./ELECTRON. ENGINEERS						
TOTAL EMPLOYED	100	100	100	100	200	200
RESEARCH & DEVELOPMENT	*	*	100	*	*	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	100	100
CONSULTING	*	*	*	*	*	*
MECHANICAL ENGINEERS						
TOTAL EMPLOYED	*	*	100	*	100	100
RESEARCH & DEVELOPMENT	*	*	*	*	100	*
MANAGEMENT OF R&D	*	*	*	*	*	*
GENERAL MANAGEMENT	*	*	*	*	*	*
TEACHING	*	*	*	*	*	*
CONSULTING	*	*	*	*	*	*
OTHER ENGINEERS						
TOTAL EMPLOYED	100	200	400	500	500	400
RESEARCH & DEVELOPMENT	*	100	100	200	200	100
MANAGEMENT OF R&D	*	*	100	100	100	*
GENERAL MANAGEMENT	*	*	*	100	*	100
TEACHING	*	*	200	100	100	*
CONSULTING	*	*	*	100	*	100

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT." HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-18. DOCTORAL SCIENTISTS AND ENGINEERS IN INDUSTRY BY FIELD AND SEX: 1985

FIELD	TOTAL EMPLOYED	MEN	WOMEN
TOTAL	125,800	112,800	12,900
SCIENTISTS	87,900	75,800	12,100
PHYSICAL SCIENTISTS	30,300	28,600	1,700
CHEMISTS	24,100	22,600	1,500
PHYSICISTS/ASTRONOMERS	6,200	6,000	200
MATHEMATICAL SCIENTISTS	1,900	1,700	200
MATHEMATICIANS	1,400	1,300	100
STATISTICIANS	500	400	100
COMPUTER/INFORMATION SPEC	8,400	7,400	1,000
ENVIRONMENTAL SCIENTISTS	5,300	4,900	300
EARTH SCIENTISTS	4,800	4,500	300
OCEANOGRAPHERS	200	100	*
ATMOSPHERIC SCIENTISTS	300	300	*
LIFE SCIENTISTS	19,200	16,600	2,600
BIOLOGICAL SCIENTISTS	9,300	7,900	1,400
AGRICULTURAL SCIENTISTS	4,000	3,700	300
MEDICAL SCIENTISTS	5,800	5,000	800
PSYCHOLOGISTS	15,500	10,400	5,100
SOCIAL SCIENTISTS	7,400	6,200	1,200
ECONOMISTS	3,000	2,700	300
SOCIOLOGISTS/ANTHRO	1,100	800	300
OTHER SOCIAL SCIENTISTS	3,300	2,700	600
ENGINEERS	37,900	37,000	800
AERO/ASTRO ENGINEERS	2,100	2,000	100
CHEMICAL ENGINEERS	5,100	5,000	100
CIVIL ENGINEERS	2,400	2,400	*
ELEC./ELECTRON. ENGINEERS	8,600	8,300	200
MATERIALS SCI. ENGINEERS	4,800	4,600	200
MECHANICAL ENGINEERS	3,100	3,100	*
NUCLEAR ENGINEERS	1,500	1,500	*
SYSTEMS DESIGN ENGINEERS	2,500	2,400	100
OTHER ENGINEERS	7,800	7,700	200

* TOO FEW CASES TO ESTIMATE

NOTE: INDUSTRY INCLUDES SELF-EMPLOYED INDIVIDUALS.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-19. DOCTORAL SCIENTISTS AND ENGINEERS IN INDUSTRY BY FIELD AND RACIAL/ETHNIC GROUP: 1985

FIELD	TOTAL EMPLOYED	RACE				
		WHITE	BLACK	NATIVE AMERICAN	ASIAN	HISPANIC(1)
TOTAL	125,800	108,100	1,000	100	15,100	1,600
SCIENTISTS	87,900	78,900	700	100	7,200	1,100
PHYSICAL SCIENTISTS	30,300	26,300	100	*	3,600	300
CHEMISTS	24,100	20,900	100	*	2,800	300
PHYSICISTS/ASTRONOMERS	6,200	5,400	*	*	800	*
MATHEMATICAL SCIENTISTS	1,900	1,800	*	*	100	*
MATHEMATICIANS	1,400	1,300	*	*	100	*
STATISTICIANS	500	500	*	*	*	*
COMPUTER/INFORMATION SPEC	8,400	7,200	*	*	1,000	100
ENVIRONMENTAL SCIENTISTS	5,300	4,700	*	*	400	*
EARTH SCIENTISTS	4,800	4,300	*	*	400	*
OCEANOGRAPHERS	200	200	*	*	*	*
ATMOSPHERIC SCIENTISTS	300	300	*	*	100	*
LIFE SCIENTISTS	19,200	17,100	100	*	1,600	200
BIOLOGICAL SCIENTISTS	9,300	8,300	*	*	900	100
AGRICULTURAL SCIENTISTS	4,000	3,600	*	*	400	100
MEDICAL SCIENTISTS	5,800	5,300	100	*	300	100
PSYCHOLOGISTS	15,500	15,100	200	*	200	300
SOCIAL SCIENTISTS	7,400	6,800	100	*	400	100
ECONOMISTS	3,000	2,700	*	*	200	100
SOCIOLOGISTS/ANTHRO	1,100	1,000	*	*	*	*
OTHER SOCIAL SCIENTISTS	3,300	3,000	100	*	100	*
ENGINEERS	37,900	29,200	300	*	7,900	400
AERO/ASTRO ENGINEERS	2,100	1,800	*	*	300	*
CHEMICAL ENGINEERS	5,100	3,600	100	*	1,400	*
CIVIL ENGINEERS	2,400	1,600	100	*	800	*
ELEC./ELECTRON. ENGINEERS	8,600	6,700	*	*	1,700	100
MATERIALS SCI. ENGINEERS	4,800	3,600	*	*	1,100	*
MECHANICAL ENGINEERS	3,100	2,300	*	*	800	*
NUCLEAR ENGINEERS	1,500	1,100	*	*	300	*
SYSTEMS DESIGN ENGINEERS	2,500	2,200	*	*	300	100
OTHER ENGINEERS	7,800	6,300	100	*	1,200	100

(1)HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT." INDUSTRY INCLUDES SELF-EMPLOYED INDIVIDUALS.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-20. DOCTORAL SCIENTISTS AND ENGINEERS IN INDUSTRY BY FIELD AND PRIMARY WORK ACTIVITY: 1985

FIELD	TOTAL EMPLOYED	...RESEARCH AND DEVELOPMENT... TOTAL	BASIC RESEARCH	APPL'D RESEARCH	DEVELOPMENT	..MANAGEMENT OR ADMIN.. TOTAL	OF R&D	GENERAL	TEACHING	CONSULTING	SALES	PROF. SERVICES	PROD. & RELATED ACT.
TOTAL	125,800	48,500	6,800	23,300	18,300	28,700	21,900	6,800	1,000	11,100	4,700	15,300	5,800
SCIENTISTS	87,900	31,100	6,200	16,100	8,800	18,100	13,600	4,400	600	7,700	3,300	14,500	4,100
PHYSICAL SCIENTISTS	30,300	15,400	3,400	8,900	3,100	8,300	7,000	1,300	*	1,100	1,300	400	1,800
CHEMISTS	24,100	11,800	2,500	6,800	2,500	7,000	5,900	1,000	*	800	1,000	300	1,500
PHYSICISTS/ASTRONOMERS	6,200	3,600	900	2,000	700	1,300	1,000	300	*	300	300	100	300
MATHEMATICAL SCIENTISTS	1,900	800	200	400	300	300	100	100	*	300	100	100	100
MATHEMATICIANS	1,400	600	100	300	200	200	100	100	*	200	100	100	100
STATISTICIANS	500	200	*	100	100	*	*	*	*	100	*	*	100
COMPUTER/INFORMATION SPEC	8,400	4,200	200	500	3,500	1,800	1,400	400	100	800	300	100	400
ENVIRONMENTAL SCIENTISTS	5,300	1,700	300	1,200	200	1,100	600	400	*	1,300	*	200	400
EARTH SCIENTISTS	4,800	1,500	300	1,100	100	1,000	500	400	*	1,300	*	200	300
OCEANOGRAPHERS	200	*	*	*	*	*	*	*	*	*	*	*	*
ATMOSPHERIC SCIENTISTS	300	100	*	*	*	100	100	*	*	*	*	*	*
LIFE SCIENTISTS	19,200	6,600	2,100	3,400	1,200	4,700	3,800	800	200	1,500	900	2,100	1,100
BIOLOGICAL SCIENTISTS	9,300	4,000	1,700	1,800	500	2,400	2,100	400	100	700	400	300	500
AGRICULTURAL SCIENTISTS	4,000	1,300	100	800	300	900	800	200	100	500	300	200	400
MEDICAL SCIENTISTS	5,800	1,400	300	700	400	1,300	1,000	300	*	300	200	1,600	200
PSYCHOLOGISTS	15,500	900	100	500	300	700	300	400	200	1,200	300	11,000	100
SOCIAL SCIENTISTS	7,400	1,500	*	1,300	200	1,300	500	800	100	1,500	500	600	200
ECONOMISTS	3,000	800	*	800	*	700	200	500	*	600	300	200	200
SOCIOLOGISTS/ANTHRO	1,100	*	*	*	*	100	100	100	*	200	100	100	*
OTHER SOCIAL SCIENTISTS	3,300	700	*	500	200	500	300	300	*	700	100	300	*
ENGINEERS	37,900	17,400	600	7,200	9,500	10,700	8,300	2,400	400	3,400	1,400	700	1,700
AERO/ASTRO ENGINEERS	2,100	1,100	*	400	700	600	500	100	*	100	*	100	*
CHEMICAL ENGINEERS	5,100	2,500	100	1,300	1,100	1,400	1,100	400	*	200	200	200	300
CIVIL ENGINEERS	2,400	700	*	200	500	300	200	100	*	700	100	200	200
ELEC./ELECTRON. ENGINEERS	8,600	4,000	100	1,300	2,500	3,100	2,500	600	*	400	400	100	200
MATERIALS SCI. ENGINEERS	4,800	2,400	200	1,600	600	1,400	1,300	100	*	200	200	100	300
MECHANICAL ENGINEERS	3,100	1,700	*	500	1,200	700	600	200	100	300	*	100	100
NUCLEAR ENGINEERS	1,500	500	*	100	400	400	200	200	*	300	*	*	*
SYSTEMS DESIGN ENGINEERS	2,500	1,400	*	400	1,000	500	400	*	*	300	*	*	100
OTHER ENGINEERS	7,800	3,100	200	1,300	1,600	2,200	1,600	600	200	900	300	100	500

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT." INDUSTRY INCLUDES SELF-EMPLOYED INDIVIDUALS.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-21. DOCTORAL SCIENTISTS AND ENGINEERS IN INDUSTRY BY FIELD AND AGE: 1985

FIELD	TOTAL EMPLOYED	AGE UNDER 35	AGE UNDER 40	AGE UNDER 50	AGE UNDER 55	AGE 55 OR OVER
TOTAL	125,800	17,700	45,200	93,500	105,900	19,800
SCIENTISTS	87,900	13,100	32,900	65,100	73,000	14,900
PHYSICAL SCIENTISTS	30,300	5,500	10,900	21,300	24,500	5,800
CHEMISTS	24,100	4,300	8,500	16,600	19,200	4,800
PHYSICISTS/ASTRONOMERS	6,200	1,200	2,400	4,700	5,300	900
MATHEMATICAL SCIENTISTS	1,900	300	800	1,500	1,700	200
MATHEMATICIANS	1,400	300	600	1,100	1,200	200
STATISTICIANS	500	100	200	400	500	100
COMPUTER/INFORMATION SPEC	8,400	1,200	3,800	7,300	7,800	500
ENVIRONMENTAL SCIENTISTS	5,300	600	1,800	3,900	4,400	900
EARTH SCIENTISTS	4,800	500	1,600	3,500	4,000	800
OCEANOGRAPHERS	200	*	100	100	100	*
ATMOSPHERIC SCIENTISTS	300	100	100	200	200	100
LIFE SCIENTISTS	19,200	2,800	7,400	14,500	16,200	3,000
BIOLOGICAL SCIENTISTS	9,300	1,800	4,300	7,300	8,200	1,200
AGRICULTURAL SCIENTISTS	4,000	500	1,300	2,900	3,300	700
MEDICAL SCIENTISTS	5,800	600	1,800	4,200	4,700	1,100
PSYCHOLOGISTS	15,500	1,900	5,700	11,000	12,400	3,200
SOCIAL SCIENTISTS	7,400	700	2,500	5,600	6,000	1,400
ECONOMISTS	3,000	300	900	2,200	2,300	800
SOCIOLOGISTS/ANTHRO	1,100	100	400	800	900	100
OTHER SOCIAL SCIENTISTS	3,300	300	1,200	2,600	2,800	500
ENGINEERS	37,900	4,600	12,300	28,400	32,900	4,900
AERO/ASTRO ENGINEERS	2,100	200	500	1,400	1,700	400
CHEMICAL ENGINEERS	5,100	700	1,900	3,900	4,500	600
CIVIL ENGINEERS	2,400	300	800	1,800	2,000	400
ELEC./ELECTRON. ENGINEERS	8,600	1,100	3,000	7,000	7,700	900
MATERIALS SCI. ENGINEERS	4,800	800	1,600	3,500	4,100	700
MECHANICAL ENGINEERS	3,100	200	800	2,200	3,000	100
NUCLEAR ENGINEERS	1,500	200	500	1,100	1,300	200
SYSTEMS DESIGN ENGINEERS	2,500	300	800	1,800	2,100	400
OTHER ENGINEERS	7,800	800	2,500	5,700	6,600	1,200

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT." INDUSTRY INCLUDES SELF-EMPLOYED INDIVIDUALS.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-22. DOCTORAL SCIENTISTS AND ENGINEERS IN 4-YEAR COLLEGES/ UNIVERSITIES BY FIELD AND SEX: 1985

FIELD	TOTAL EMPLOYED	MEN	WOMEN
TOTAL	202,000	170,300	31,700
SCIENTISTS	180,500	149,300	31,200
PHYSICAL SCIENTISTS	28,200	26,100	2,100
CHEMISTS	15,000	13,400	1,600
PHYSICISTS/ASTRONOMERS	13,200	12,700	500
MATHEMATICAL SCIENTISTS	13,000	11,900	1,100
MATHEMATICIANS	11,100	10,200	1,000
STATISTICIANS	1,900	1,700	200
COMPUTER/INFORMATION SPEC	5,100	4,700	500
ENVIRONMENTAL SCIENTISTS	7,100	6,600	500
EARTH SCIENTISTS	5,000	4,700	300
OCEANOGRAPHERS	1,200	1,000	100
ATMOSPHERIC SCIENTISTS	1,000	900	100
LIFE SCIENTISTS	61,800	48,900	12,900
BIOLOGICAL SCIENTISTS	39,200	30,500	8,700
AGRICULTURAL SCIENTISTS	8,500	8,000	400
MEDICAL SCIENTISTS	14,100	10,400	3,700
PSYCHOLOGISTS	21,500	15,300	6,200
SOCIAL SCIENTISTS	43,800	35,800	8,000
ECONOMISTS	11,600	10,700	1,000
SOCIOLOGISTS/ANTHRO	10,000	7,100	2,900
OTHER SOCIAL SCIENTISTS	22,100	18,000	4,100
ENGINEERS	21,500	21,100	400
AERO/ASTRO ENGINEERS	700	700	*
CHEMICAL ENGINEERS	1,700	1,700	*
CIVIL ENGINEERS	3,400	3,400	*
ELEC./ELECTRON. ENGINEERS	4,600	4,500	100
MATERIALS SCI. ENGINEERS	1,800	1,800	*
MECHANICAL ENGINEERS	2,900	2,900	*
NUCLEAR ENGINEERS	500	500	*
SYSTEMS DESIGN ENGINEERS	800	700	*
OTHER ENGINEERS	5,000	4,900	100

* TOO FEW CASES TO ESTIMATE

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-23. DOCTORAL SCIENTISTS AND ENGINEERS IN 4-YEAR COLLEGES/UNIVERSITIES BY FIELD AND RACIAL/ETHNIC GROUP: 1985

FIELD	TOTAL EMPLOYED	RACE				
		WHITE	BLACK	NATIVE AMERICAN	ASIAN	HISPANIC(1)
TOTAL	202,000	181,100	3,500	300	14,800	2,900
SCIENTISTS	180,500	163,100	3,400	200	11,900	2,600
PHYSICAL SCIENTISTS	28,200	25,100	300	100	2,300	400
CHEMISTS	15,000	13,400	200	*	1,100	300
PHYSICISTS/ASTRONOMERS	13,200	11,700	100	*	1,200	100
MATHEMATICAL SCIENTISTS	13,000	11,600	100	*	1,100	200
MATHEMATICIANS	11,100	10,000	100	*	800	200
STATISTICIANS	1,900	1,600	*	*	300	*
COMPUTER/INFORMATION SPEC	5,100	4,400	*	*	600	100
ENVIRONMENTAL SCIENTISTS	7,100	6,600	*	*	400	100
EARTH SCIENTISTS	5,000	4,600	*	*	300	100
OCEANOGRAPHERS	1,200	1,100	*	*	100	*
ATMOSPHERIC SCIENTISTS	1,000	800	*	*	100	*
LIFE SCIENTISTS	61,800	55,900	900	*	4,500	800
BIOLOGICAL SCIENTISTS	39,200	35,300	600	*	3,000	500
AGRICULTURAL SCIENTISTS	8,500	8,000	100	*	300	100
MEDICAL SCIENTISTS	14,100	12,500	300	*	1,200	200
PSYCHOLOGISTS	21,500	20,200	600	*	300	400
SOCIAL SCIENTISTS	43,800	39,300	1,300	*	2,700	600
ECONOMISTS	11,600	10,300	200	*	1,000	200
SOCIOLOGISTS/ANTHRO	10,000	9,200	300	*	400	200
OTHER SOCIAL SCIENTISTS	22,100	19,800	800	*	1,300	300
ENGINEERS	21,500	18,000	200	100	3,000	300
AERO/ASTRO ENGINEERS	700	600	*	*	100	*
CHEMICAL ENGINEERS	1,700	1,300	*	*	400	100
CIVIL ENGINEERS	3,400	3,100	*	*	300	*
ELEC./ELECTRON. ENGINEERS	4,600	3,800	*	*	600	100
MATERIALS SCI. ENGINEERS	1,800	1,500	*	*	300	*
MECHANICAL ENGINEERS	2,900	2,300	100	*	500	*
NUCLEAR ENGINEERS	500	500	*	*	*	*
SYSTEMS DESIGN ENGINEERS	800	700	*	*	100	*
OTHER ENGINEERS	5,000	4,300	*	*	700	*

(1)HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-24. DOCTORAL SCIENTISTS AND ENGINEERS IN 4-YEAR COLLEGES/UNIVERSITIES BY FIELD AND PRIMARY WORK ACTIVITY: 1985

FIELD	TOTAL EMPLOYED	...RESEARCH AND DEVELOPMENT... TOTAL	BASIC RESEARCH	APPL'D RESEARCH	DEVELOPMENT	..MANAGEMENT OR ADMIN.. TOTAL	OF R&D	GENERAL	TEACHING	CONSULTING	SALES	PROF. SERVICES	PROD. & RELATED ACT.
TOTAL	202,000	60,600	43,600	15,700	1,300	22,700	3,900	18,700	103,700	1,200	100	4,700	600
SCIENTISTS	180,500	55,400	41,200	13,300	900	19,100	2,900	16,300	91,800	1,100	100	4,600	400
PHYSICAL SCIENTISTS	28,200	10,700	8,700	1,700	200	2,700	900	1,900	13,500	*	*	100	100
CHEMISTS	15,000	5,100	4,600	400	*	1,100	200	900	8,100	*	*	100	100
PHYSICISTS/ASTRONOMERS	13,200	5,600	4,100	1,300	200	1,600	700	1,000	5,500	*	*	*	*
MATHEMATICAL SCIENTISTS	13,000	2,400	2,100	300	*	1,200	100	1,100	8,900	100	*	*	*
MATHEMATICIANS	11,100	2,100	1,900	200	*	1,000	*	1,000	7,600	*	*	*	*
STATISTICIANS	1,900	300	200	100	*	100	*	100	1,300	100	*	*	*
COMPUTER/INFORMATION SPEC	5,100	1,400	700	300	300	500	100	500	2,600	100	*	100	100
ENVIRONMENTAL SCIENTISTS	7,100	2,700	1,900	700	*	900	400	600	3,200	*	*	*	*
EARTH SCIENTISTS	5,000	1,300	1,000	300	*	600	200	400	2,800	*	*	*	*
OCEANOGRAPHERS	1,200	800	700	*	*	200	100	100	200	*	*	*	*
ATMOSPHERIC SCIENTISTS	1,000	600	300	300	*	100	100	100	200	*	*	*	*
LIFE SCIENTISTS	61,800	29,100	22,700	6,100	300	6,200	1,000	5,200	20,700	300	*	2,100	200
BIOLOGICAL SCIENTISTS	39,200	20,000	18,100	1,800	100	2,900	400	2,500	14,000	200	*	400	*
AGRICULTURAL SCIENTISTS	8,500	4,300	1,200	3,100	*	1,100	300	900	2,200	100	*	200	*
MEDICAL SCIENTISTS	14,100	4,900	3,500	1,200	200	2,200	300	1,900	4,500	100	*	1,500	100
PSYCHOLOGISTS	21,500	3,600	2,100	1,400	*	2,400	100	2,300	12,000	300	*	2,100	100
SOCIAL SCIENTISTS	43,800	5,500	2,900	2,600	*	5,100	300	4,800	30,800	200	*	200	*
ECONOMISTS	11,600	2,300	800	1,500	*	1,200	*	1,200	7,600	100	*	*	*
SOCIOLOGISTS/ANTHRO	10,000	1,300	1,000	300	*	800	100	700	7,300	*	*	100	*
OTHER SOCIAL SCIENTISTS	22,100	1,900	1,100	800	*	3,100	200	2,900	15,900	100	*	100	*
ENGINEERS	21,500	5,200	2,400	2,400	400	3,500	1,100	2,500	11,900	100	*	100	100
AERO/ASTRO ENGINEERS	700	300	100	100	*	100	100	*	300	*	*	*	*
CHEMICAL ENGINEERS	1,700	600	300	200	*	200	*	200	900	*	*	*	*
CIVIL ENGINEERS	3,400	600	300	300	*	600	100	500	2,200	*	*	*	*
ELEC./ELECTRON. ENGINEERS	4,600	800	400	300	100	800	200	600	2,900	*	*	*	100
MATERIALS SCI. ENGINEERS	1,800	500	200	200	100	400	100	200	800	*	*	*	*
MECHANICAL ENGINEERS	2,900	600	300	300	*	400	100	300	1,800	*	*	*	*
NUCLEAR ENGINEERS	500	300	*	200	*	200	100	*	100	*	*	*	*
SYSTEMS DESIGN ENGINEERS	800	200	100	*	*	200	100	100	400	*	*	*	*
OTHER ENGINEERS	5,000	1,500	600	800	100	900	300	600	2,400	100	*	100	100

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-25. DOCTORAL SCIENTISTS AND ENGINEERS IN 4-YEAR COLLEGES/ UNIVERSITIES BY FIELD AND AGE: 1985

FIELD	TOTAL EMPLOYED	AGE: UNDER 35	UNDER 40	UNDER 50	UNDER 55	55 OR OVER
TOTAL	202,000	27,700	64,500	136,600	159,900	42,000
SCIENTISTS	180,500	24,900	58,100	123,100	143,200	37,200
PHYSICAL SCIENTISTS	28,200	3,900	7,800	18,300	21,700	6,500
CHEMISTS	15,000	2,200	4,200	9,700	11,600	3,500
PHYSICISTS/ASTRONOMERS	13,200	1,700	3,600	8,500	10,100	3,100
MATHEMATICAL SCIENTISTS	13,000	1,600	3,700	8,900	10,700	2,300
MATHEMATICIANS	11,100	1,400	3,200	7,600	9,100	2,000
STATISTICIANS	1,900	300	500	1,300	1,600	300
COMPUTER/INFORMATION SPEC	5,100	1,000	2,100	4,200	4,500	600
ENVIRONMENTAL SCIENTISTS	7,100	800	2,300	4,700	5,800	1,200
EARTH SCIENTISTS	5,000	600	1,400	3,100	4,000	900
OCEANOGRAPHERS	1,200	200	500	900	1,000	100
ATMOSPHERIC SCIENTISTS	1,000	100	300	700	800	200
LIFE SCIENTISTS	61,800	9,800	21,800	43,200	49,700	12,000
BIOLOGICAL SCIENTISTS	39,200	6,800	14,500	28,400	32,200	7,000
AGRICULTURAL SCIENTISTS	8,500	1,200	2,700	5,200	6,100	2,300
MEDICAL SCIENTISTS	14,100	1,800	4,600	9,600	11,400	2,700
PSYCHOLOGISTS	21,500	3,200	8,200	15,000	17,200	4,200
SOCIAL SCIENTISTS	43,800	4,500	12,300	29,000	33,600	10,100
ECONOMISTS	11,600	1,600	3,600	7,600	8,600	3,000
SOCIOLOGISTS/ANTHRO	10,000	800	2,200	6,500	7,500	2,500
OTHER SOCIAL SCIENTISTS	22,100	2,100	6,400	14,900	17,500	4,600
ENGINEERS	21,500	2,800	6,400	13,500	16,700	4,800
AERO/ASTRO ENGINEERS	700	100	200	500	600	200
CHEMICAL ENGINEERS	1,700	500	800	1,200	1,400	300
CIVIL ENGINEERS	3,400	500	1,000	2,300	2,800	600
ELEC./ELECTRON. ENGINEERS	4,600	700	1,300	2,800	3,600	1,100
MATERIALS SCI. ENGINEERS	1,800	100	400	800	1,200	600
MECHANICAL ENGINEERS	2,900	400	1,000	2,000	2,300	600
NUCLEAR ENGINEERS	500	*	200	300	400	200
SYSTEMS DESIGN ENGINEERS	800	100	300	700	700	100
OTHER ENGINEERS	5,000	400	1,300	3,000	3,800	1,200

* TOO FEW CASES TO ESTIMATE

NOTE: COMPONENTS MAY NOT ADD TO TOTAL BECAUSE THAT SUM INCLUDES "OTHER" AND "NO REPORT."

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-26. PERCENT DISTRIBUTION OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD OF EMPLOYMENT AND FIELD OF DOCTORATE: 1975

FIELD OF DOCTORATE	1975 FIELD OF EMPLOYMENT												
			PHYSICAL SCIENTISTS			...MATH. SCIENTISTS....				ENVIRONMENTAL SCIENTISTS			
	TOTAL	TOTAL SCIEN-TISTS	TOTAL	CHEM-ISTS	PHYSI-CISTS/ ASTRON.	TOTAL	MATH.	STAT.	COMP/ INFRM. SPEC.	TOTAL	EARTH SCI.	OCEAN.	ATMOS. SCI.
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SCIENTISTS,TOTAL	82.9	95.8	96.5	98.3	93.1	93.3	93.4	92.8	74.3	93.2	92.9	96.6	92.5
PHYSICAL SCI.	25.0	27.2	92.5	93.1	91.4	3.9	4.1	2.5	17.6	16.9	13.2	10.6	49.6
CHEMISTS	16.0	18.0	62.0	92.4	4.1	.7	.7	1.1	3.8	7.7	7.6	2.3	13.0
PHYSICISTS/ASTRON.	8.9	9.2	30.5	.8	87.3	3.1	3.4	1.4	13.9	9.3	5.6	8.3	36.7
MATHEMATICAL SCI.	5.5	6.3	.1	*	.4	86.9	87.9	80.0	30.8	.4	.3	.6	.9
MATHEMATICIANS	5.0	5.7	.1	*	.4	79.1	86.4	29.3	29.3	.3	.2	.6	.9
STATISTICIANS	.5	.6	*	*	*	7.8	1.4	50.8	1.4	*	.1	*	*
COMPUTER SPECIALISTS	.3	.4	*	*	*	.3	.3	.3	21.9	*	*	*	*
ENVIRONMENTAL SCI.	3.2	3.7	.3	.2	.5	*	*	*	.5	62.8	65.8	62.2	41.2
EARTH SCIENTISTS	2.6	3.0	.2	.2	.3	*	*	*	.2	50.8	62.3	14.2	3.3
OCEANOGRAPHERS	.3	.4	*	*	*	*	*	*	*	6.4	1.9	46.0	.5
ATMOSPHERIC SCI.	.3	.3	.1	*	.3	*	*	*	.3	5.5	1.6	2.0	37.4
LIFE SCIENTISTS	23.7	28.3	3.5	4.9	.7	.3	.2	1.3	.8	10.5	10.3	23.2	*
BIOLOGICAL SCI.	16.9	20.1	2.8	3.9	.5	.2	.1	.5	.5	8.5	7.7	23.1	*
AGRICULTURAL SCI.	4.2	5.0	.4	.6	*	.1	*	.8	.3	1.5	2.0	.1	*
MEDICAL SCI.	2.7	3.2	.3	.4	.1	*	*	*	*	.5	.6	*	*
PSYCHOLOGISTS	10.9	13.0	*	*	*	.4	.3	1.4	.8	*	*	*	*
SOCIAL SCIENTISTS	14.2	17.0	*	.1	*	1.5	.7	7.3	2.0	2.7	3.3	*	.8
ECONOMISTS	4.8	5.7	*	.1	*	.8	.5	3.1	.9	.3	.4	*	*
SOCIOLOGST/ANTHRO.	3.4	4.1	*	*	*	*	*	*	*	.1	.1	*	*
OTHER SOCIAL SCI.	6.0	7.2	*	*	*	.7	.2	4.2	1.0	2.2	2.8	*	.8
ENGINEERS,TOTAL	15.4	2.1	3.1	1.4	6.6	3.6	3.5	4.0	24.9	6.4	6.7	2.7	7.5
AERO/ASTRO ENGINEER	.7	.1	.3	*	.9	.3	.3	.5	1.4	.3	.2	*	.8
CHEMICAL ENGINEERS	2.5	.3	.6	.8	.2	.2	.2	.6	2.7	.5	.7	*	*
CIVIL ENGINEERS	1.5	.2	.1	*	.1	.1	.1	*	.8	1.8	2.0	.5	1.2
ELEC./ELECTRON. ENG.	3.7	.7	1.0	*	2.8	.9	.8	1.1	14.3	1.4	1.3	.8	2.9
MATERIALS SCI. ENG.	1.7	.2	.5	.4	.6	*	*	*	.6	.6	.7	*	*
MECHANICAL ENG.	1.7	.1	.3	*	.7	.2	.2	*	.6	.5	.4	*	2.0
NUCLEAR ENG.	.3	*	*	*	.1	*	*	*	*	*	*	*	*
SYSTEMS DESIGN ENG.	.3	.1	*	*	*	1.2	1.3	.9	.6	*	*	*	*
OTHER ENGINEERS	2.8	.4	.5	.1	1.2	.6	.6	.9	4.1	1.3	1.4	1.4	.7
NON S/E,TOTAL	1.8	2.0	.3	.3	.3	3.1	3.1	3.2	.9	.4	.5	.6	*

* TOO FEW CASES TO ESTIMATE

TABLE B-26. PERCENT DISTRIBUTION OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD OF EMPLOYMENT CONTINUED AND FIELD OF DOCTORATE: 1975

1975 FIELD OF EMPLOYMENT

FIELD OF DOCTORATE	LIFE SCIENTISTS				PSY-	SOCIAL SCIENTISTS			
	TOTAL	BIOL. SCI.	AGRIC. SCI.	MEDICAL SCI.	CHOL-OGISTS	TOTAL	ECON-OMISTS	SOCIO/ ANTHRO.	OTHER
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SCIENTISTS, TOTAL	98.8	99.0	99.2	97.9	90.4	98.1	98.8	98.2	97.5
PHYSICAL SCI.	6.3	6.1	3.0	9.7	.2	.6	.5	*	.8
CHEMISTS	5.3	5.1	2.7	8.2	.1	.2	.2	*	.2
PHYSICISTS/ASTRON.	1.0	1.0	.3	1.5	.1	.4	.4	*	.7
MATHEMATICAL SCI.	.5	.7	*	.2	*	.3	.2	*	.4
MATHEMATICIANS	.2	.3	*	.1	*	.2	.2	*	.4
STATISTICIANS	.3	.5	*	.1	*	*	*	*	.1
COMPUTER SPECIALISTS	*	*	*	*	*	*	*	*	.1
ENVIRONMENTAL SCI.	.2	.3	.3	.1	*	.1	*	*	.2
EARTH SCIENTISTS	.1	.1	.3	.1	*	*	*	*	.1
OCEANOGRAPHERS	.1	.1	*	*	*	*	*	*	*
ATMOSPHERIC SCI.	*	*	*	*	*	*	*	*	.1
LIFE SCIENTISTS	89.7	91.0	94.7	81.5	.4	.6	.5	.4	.8
BIOLOGICAL SCI.	63.4	86.2	15.5	36.3	.3	.2	*	.2	.4
AGRICULTURAL SCI.	16.0	3.4	79.1	1.0	*	.3	.5	.2	.3
MEDICAL SCI.	10.2	1.5	.1	44.1	.1	.1	*	*	.2
PSYCHOLOGISTS	1.2	.6	*	3.9	88.5	1.1	.1	.6	2.0
SOCIAL SCIENTISTS	1.0	.3	1.3	2.5	1.2	95.4	97.5	97.2	93.2
ECONOMISTS	.3	*	1.2	.3	.1	32.2	95.8	.3	2.2
SOCIOLOGST/ANTHRO.	.4	.2	*	1.4	.7	22.9	*	94.7	5.1
OTHER SOCIAL SCI.	.2	.1	.1	.8	.5	40.3	1.6	2.3	85.9
ENGINEERS, TOTAL	.8	.6	.6	1.5	.1	.4	.5	*	.5
CHEMICAL ENGINEERS	.1	*	.2	.2	*	.1	.3	*	*
CIVIL ENGINEERS	*	*	*	*	*	.1	.1	*	.2
ELEC./ELECTRON. ENG.	.1	*	.1	.2	*	.1	*	*	.3
MATERIALS SCI. ENG.	*	*	*	.1	*	*	*	*	*
MECHANICAL ENG.	.1	.1	.1	.1	*	*	*	*	*
NUCLEAR ENG.	*	*	*	.1	*	*	.1	*	*
SYSTEMS DESIGN ENG.	*	*	*	*	*	*	*	*	*
OTHER ENGINEERS	.4	.4	.2	.7	.1	*	.1	*	*
NON S/E, TOTAL	.4	.4	.2	.6	9.5	1.6	.7	1.8	2.1

* TOO FEW CASES TO ESTIMATE

TABLE B-26. PERCENT DISTRIBUTION OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD OF EMPLOYMENT AND FIELD OF DOCTORATE: 1975

CONTINUED

1975 FIELD OF EMPLOYMENT

FIELD OF DOCTORATE	TOTAL	ENGINEERS								
		AERO/ ASTRO	CHEM	CIVIL	ELEC./ ELECTRN	MAT'LS SCI	MECH	NUCLEAR	SYSTEMS DESIGN	OTHER ENGIN
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SCIENTISTS,TOTAL	17.6	14.0	10.7	8.1	15.3	19.7	3.0	35.2	35.8	25.4
PHYSICAL SCI.	13.9	9.8	10.4	4.6	12.8	18.4	2.2	33.5	16.9	19.9
CHEMISTS	6.0	2.0	9.7	4.3	2.7	12.3	.2	7.3	4.6	7.9
PHYSICISTS/ASTRON.	7.9	7.8	.7	.3	10.1	6.1	2.0	26.1	12.2	12.1
MATHEMATICAL SCI.	1.5	3.2	.1	.5	1.0	.1	.4	1.3	12.0	1.3
MATHEMATICIANS	1.4	3.1	.1	.5	1.0	.1	.4	1.3	11.2	1.3
STATISTICIANS	.1	.1	*	*	*	*	*	*	.9	*
COMPUTER SPECIALISTS	.1	*	*	*	.4	*	.1	*	*	.2
ENVIRONMENTAL SCI.	.5	*	*	1.2	.2	.5	*	*	.7	1.2
EARTH SCIENTISTS	.5	*	*	1.2	.2	.5	*	*	.2	1.2
ATMOSPHERIC SCI.	*	*	*	*	*	*	*	*	.5	*
LIFE SCIENTISTS	.9	.7	.2	.9	.4	.7	.1	.5	.9	2.1
BIOLOGICAL SCI.	.6	.5	.2	.5	.4	.4	.1	.5	.6	1.5
AGRICULTURAL SCI.	.1	.2	*	.2	*	.1	*	*	*	.4
MEDICAL SCI.	.1	*	*	.2	*	.2	*	*	.2	.1
PSYCHOLOGISTS	.2	*	*	*	.3	*	*	*	1.6	.1
SOCIAL SCIENTISTS	.5	.3	*	.9	.3	*	.2	*	3.7	.6
ECONOMISTS	.2	.3	*	.3	.1	*	*	*	2.5	.1
SOCIOLOGST/ANTHRO.	*	*	*	.3	*	*	*	*	*	*
OTHER SOCIAL SCI.	.3	*	*	.3	.2	*	.2	*	1.2	.5
ENGINEERS,TOTAL	82.1	85.7	89.2	91.8	84.5	80.3	96.9	64.5	62.9	74.0
AERO/ASTRO ENGINEER	3.7	48.1	*	.3	.4	*	6.1	1.4	1.5	2.6
CHEMICAL ENGINEERS	13.8	1.3	86.0	3.0	.2	3.7	1.0	10.4	5.5	5.5
CIVIL ENGINEERS	8.5	2.9	.2	79.2	*	.4	2.2	*	2.0	4.0
ELEC./ELECTRON. ENG.	19.3	7.1	*	*	76.9	1.1	.4	.7	20.2	9.0
MATERIALS SCI. ENG.	9.3	*	.3	.6	1.1	71.1	1.6	1.7	*	3.3
MECHANICAL ENG.	9.5	9.2	.5	.7	.5	.6	71.0	6.1	2.0	7.2
NUCLEAR ENG.	1.8	.7	.4	.3	*	.1	.6	36.5	.6	.8
SYSTEMS DESIGN ENG.	1.4	1.5	*	.7	.8	*	*	*	18.2	.1
OTHER ENGINEERS	14.8	14.8	1.8	7.0	4.5	3.3	13.8	7.8	12.8	41.4
NON S/E,TOTAL	.3	.3	.1	.1	.2	*	.1	.2	1.3	.6

* TOO FEW CASES TO ESTIMATE

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-27. PERCENT DISTRIBUTION OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD OF EMPLOYMENT AND FIELD OF DOCTORATE: 1985

	1985 FIELD OF EMPLOYMENT												
			PHYSICAL SCIENTISTS			...MATH. SCIENTISTS....				ENVIRONMENTAL SCIENTISTS			
FIELD OF DOCTORATE	TOTAL	TOTAL SCIEN-TISTS	TOTAL	CHEM-ISTS	PHYSI-CISTS/ ASTRON.	TOTAL	MATH.	STAT.	COMP/ INFRM. SPEC.	TOTAL	EARTH SCI.	OCEAN.	ATMOS. SCI.
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SCIENTISTS,TOTAL	83.0	95.4	97.5	99.1	94.5	93.9	93.3	96.6	72.4	92.6	92.0	95.0	93.8
PHYSICAL SCI.	20.4	21.8	91.9	92.2	91.3	3.2	3.5	1.4	17.1	12.3	11.0	3.8	28.1
CHEMISTS	12.7	14.3	60.7	91.8	3.4	.6	.7	*	6.6	6.1	6.0	.3	11.7
PHYSICISTS/ASTRON.	7.6	7.5	31.1	.3	87.8	2.6	2.8	1.4	10.5	6.2	5.0	3.5	16.3
MATHEMATICAL SCI.	4.9	5.5	.2	*	.4	86.5	87.5	81.9	18.1	.5	.4	.7	.8
MATHEMATICIANS	4.4	4.9	.2	*	.4	77.8	86.2	36.2	17.1	.5	.4	.6	.8
STATISTICIANS	.5	.6	*	*	*	8.7	1.3	45.7	1.1	*	*	.1	*
COMPUTER SPECIALISTS	.8	.8	*	*	*	.2	.3	*	18.2	*	*	*	*
ENVIRONMENTAL SCI.	3.3	3.8	.6	.4	1.1	.2	.3	*	.9	65.8	66.5	69.3	58.7
EARTH SCIENTISTS	2.4	2.8	.3	.3	.3	.1	.1	*	.5	49.8	63.1	10.4	3.4
OCEANOGRAPHERS	.5	.5	.1	*	.1	.1	.1	*	.1	8.5	2.6	56.8	.9
ATMOSPHERIC SCI.	.4	.5	.2	*	.7	*	*	*	.3	7.5	.8	2.1	54.4
LIFE SCIENTISTS	24.3	28.7	4.8	6.4	1.8	1.5	.7	5.4	5.0	10.6	10.7	18.9	3.0
BIOLOGICAL SCI.	16.4	19.5	3.8	5.1	1.4	1.4	.6	5.0	3.7	8.1	7.9	16.3	1.5
AGRICULTURAL SCI.	3.9	4.6	.5	.7	.1	.1	.1	.5	.8	2.3	2.4	2.3	1.5
MEDICAL SCI.	3.9	4.6	.6	.7	.4	*	*	*	.4	.3	.4	.3	*
PSYCHOLOGISTS	13.6	16.1	*	.1	*	.4	.1	2.2	6.7	.1	*	.7	*
SOCIAL SCIENTISTS	15.8	18.8	.1	.1	*	1.7	1.0	5.6	6.4	3.2	3.5	1.6	3.2
ECONOMISTS	4.6	5.5	*	*	*	.9	.8	1.8	1.0	.1	.1	*	*
SOCIOLOGST/ANTHRO.	4.1	4.9	*	.1	*	*	*	*	1.7	.5	.6	*	*
OTHER SOCIAL SCI.	7.1	8.4	*	*	*	.8	.2	3.9	3.8	2.7	2.8	1.6	3.2
ENGINEERS,TOTAL	15.0	2.2	2.3	.8	5.1	2.8	3.3	.1	19.0	6.9	7.6	3.7	5.2
AERO/ASTRO ENGINEER	.8	.2	.3	*	.8	.3	.3	*	1.5	.3	.3	*	*
CHEMICAL ENGINEERS	2.3	.2	.2	.3	*	.1	.2	*	1.3	*	*	*	*
CIVIL ENGINEERS	1.9	.3	.1	*	.3	*	*	*	1.3	2.8	2.9	.2	4.5
ELEC./ELECTRON. ENG.	3.2	.6	.4	*	1.2	*	*	*	7.2	1.6	1.7	1.8	.7
MATERIALS SCI. ENG.	1.4	.1	.4	.3	.5	*	*	*	.4	.1	.1	*	*
MECHANICAL ENG.	1.6	.1	.1	*	.2	.1	.2	*	.2	.5	.3	1.7	*
NUCLEAR ENG.	.5	.1	.3	*	.9	*	*	*	.2	.1	.1	*	*
SYSTEMS DESIGN ENG.	.4	.2	*	*	*	2.2	2.6	.1	1.5	.1	.2	*	*
OTHER ENGINEERS	2.7	.5	.5	.2	1.2	.1	.1	*	5.4	1.5	2.0	*	*
NON S/E,TOTAL	2.1	2.4	.2	.1	.3	3.3	3.3	3.3	8.6	.5	.3	1.3	1.0

* TOO FEW CASES TO ESTIMATE

TABLE B-27. PERCENT DISTRIBUTION OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD OF EMPLOYMENT AND FIELD OF DOCTORATE: 1985
CONTINUED

1985 FIELD OF EMPLOYMENT

FIELD OF DOCTORATE	TOTAL	LIFE SCIENTISTS: BIOL. SCI.	LIFE SCIENTISTS: AGRIC. SCI.	LIFE SCIENTISTS: MEDICAL SCI.	PSY-CHOL-OGISTS	SOCIAL SCIENTISTS: TOTAL	SOCIAL SCIENTISTS: ECON-OMISTS	SOCIAL SCIENTISTS: SOCIO/ ANTHRO.	SOCIAL SCIENTISTS: OTHER
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SCIENTISTS, TOTAL	98.4	99.1	98.4	96.6	95.7	94.9	99.0	98.5	91.3
PHYSICAL SCI.	5.3	5.0	2.2	7.6	.1	.4	.4	*	.6
CHEMISTS	4.5	4.4	2.1	6.2	*	.3	.4	*	.3
PHYSICISTS/ASTRON.	.7	.6	.1	1.3	.1	.2	*	*	.3
MATHEMATICAL SCI.	.7	1.0	*	.4	*	.4	.4	*	.5
MATHEMATICIANS	.3	.4	*	.3	*	.3	.4	*	.4
STATISTICIANS	.4	.6	*	.2	*	.1	*	*	.1
COMPUTER SPECIALISTS	*	*	*	.1	*	*	*	*	*
ENVIRONMENTAL SCI.	.5	.4	1.1	.4	*	.2	.1	*	.3
EARTH SCIENTISTS	.3	.3	.3	.3	*	.2	.1	*	.3
OCEANOGRAPHERS	.2	.2	.7	*	*	*	*	*	*
ATMOSPHERIC SCI.	*	*	*	.1	*	*	*	*	*
LIFE SCIENTISTS	87.6	90.2	93.3	78.2	.5	.8	.7	.2	1.1
BIOLOGICAL SCI.	59.0	82.4	16.0	31.3	.2	.2	.1	*	.4
AGRICULTURAL SCI.	14.2	3.8	76.9	1.0	*	.3	.5	.1	.2
MEDICAL SCI.	14.3	4.0	.4	45.9	.2	.3	.1	.1	.4
PSYCHOLOGISTS	2.6	2.0	*	5.3	94.1	1.6	.3	.5	2.7
SOCIAL SCIENTISTS	1.8	.5	1.9	4.7	1.0	91.6	97.1	97.8	86.2
ECONOMISTS	.3	.1	1.5	.2	.1	27.8	95.3	.2	2.1
SOCIOLOGST/ANTHRO.	1.0	.3	.2	3.1	.4	22.9	.2	95.0	7.6
OTHER SOCIAL SCI.	.4	.1	.1	1.4	.5	40.9	1.6	2.6	76.5
ENGINEERS, TOTAL	1.0	.7	.7	1.8	*	.2	.3	*	.2
AERO/ASTRO ENGINEER	*	*	*	.1	*	*	*	*	*
CHEMICAL ENGINEERS	.2	.1	.1	.3	*	.1	*	*	.1
CIVIL ENGINEERS	.1	.1	*	.1	*	.1	.1	*	*
ELEC./ELECTRON. ENG.	.2	.3	*	.2	*	*	.1	*	*
MATERIALS SCI. ENG.	.1	*	.1	.3	*	*	*	*	*
MECHANICAL ENG.	.1	*	*	.2	*	*	*	*	*
NUCLEAR ENG.	.1	*	*	.3	*	*	*	*	*
SYSTEMS DESIGN ENG.	*	*	.2	*	*	*	*	*	*
OTHER ENGINEERS	.2	.2	.3	.3	*	*	*	*	*
NON S/E, TOTAL	.7	.2	.9	1.5	4.3	4.9	.7	1.5	8.5

* TOO FEW CASES TO ESTIMATE

TABLE B-27. PERCENT DISTRIBUTION OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD OF EMPLOYMENT AND CONTINUED FIELD OF DOCTORATE: 1985

1985 FIELD OF EMPLOYMENT

FIELD OF DOCTORATE	TOTAL	ENGINEERS								
		AERO/ ASTRO	CHEM	CIVIL	ELEC./ ELECTRN	MAT'LS SCI	MECH	NUCLEAR	SYSTEMS DESIGN	OTHER ENGIN
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SCIENTISTS,TOTAL	19.7	20.9	6.9	4.8	21.8	26.2	5.0	18.0	46.2	27.2
PHYSICAL SCI.	13.2	10.6	6.3	.9	12.9	24.3	3.4	17.3	23.0	18.6
CHEMISTS	4.7	2.8	5.2	.9	2.7	15.8	.3	5.6	1.8	5.4
PHYSICISTS/ASTRON.	8.5	7.8	1.1	*	10.2	8.5	3.1	11.7	21.2	13.1
MATHEMATICAL SCI.	1.9	5.0	*	*	2.9	*	.8	*	10.5	1.7
MATHEMATICIANS	1.8	4.6	*	*	2.8	*	.8	*	10.3	1.4
STATISTICIANS	.1	.4	*	*	.1	*	*	*	.2	.3
COMPUTER SPECIALISTS	.5	.4	*	*	1.6	*	*	*	1.4	.1
ENVIRONMENTAL SCI.	.9	1.5	.4	.7	.6	.8	.4	*	1.2	1.7
EARTH SCIENTISTS	.6	.2	.4	.7	.3	.8	.3	*	1.1	1.2
OCEANOGRAPHERS	.1	.1	*	*	.2	*	*	*	*	.3
ATMOSPHERIC SCI.	.2	1.2	*	*	.1	*	.1	*	.2	.2
LIFE SCIENTISTS	1.7	1.0	.2	2.8	1.7	1.0	.3	.6	1.6	3.3
BIOLOGICAL SCI.	1.1	.2	.1	2.0	1.3	.3	*	.6	1.1	2.1
AGRICULTURAL SCI.	.4	.5	*	.2	*	.7	.3	*	.5	.9
MEDICAL SCI.	.2	.3	.1	.6	.3	*	*	*	*	.3
PSYCHOLOGISTS	.8	.4	*	*	1.4	*	*	*	3.4	1.4
SOCIAL SCIENTISTS	.7	2.0	*	.3	.7	*	*	*	5.1	.4
ECONOMISTS	.1	*	*	*	*	*	*	*	1.4	.1
SOCIOLOGST/ANTHRO.	.1	*	*	*	.2	*	*	*	*	.1
OTHER SOCIAL SCI.	.5	2.0	*	.3	.5	*	*	*	3.6	.1
ENGINEERS,TOTAL	80.1	78.9	93.1	95.0	77.8	73.8	95.0	82.0	52.6	72.4
AERO/ASTRO ENGINEER	4.0	44.1	.2	.7	.8	*	6.7	4.3	*	1.6
CHEMICAL ENGINEERS	13.3	3.6	88.2	1.3	1.6	8.0	.7	5.9	1.3	8.5
CIVIL ENGINEERS	10.3	3.1	.9	83.7	.4	*	2.5	.1	2.1	6.8
ELEC./ELECTRON. ENG.	16.9	7.2	*	*	64.1	1.5	*	3.6	15.8	6.4
MATERIALS SCI. ENG.	8.0	*	1.9	*	2.0	59.7	2.0	*	*	2.9
MECHANICAL ENG.	9.4	6.6	*	.4	.8	.9	65.7	5.9	5.9	7.0
NUCLEAR ENG.	2.8	.6	.3	*	.3	.8	.9	58.4	2.9	.8
SYSTEMS DESIGN ENG.	1.6	2.8	*	.4	1.0	*	*	.1	19.3	.6
OTHER ENGINEERS	13.8	10.9	1.6	8.6	6.8	3.0	16.6	3.8	5.3	37.8
NON S/E,TOTAL	.3	.2	*	.2	.4	*	*	*	1.2	.4

* TOO FEW CASES TO ESTIMATE

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-28. MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND SECTOR OF EMPLOYMENT: 1975 AND 1985

FIELD AND YEAR	TOTAL	...INDUSTRY... TOTAL	SELF-EMPL	4-YEAR COLL/UNIV	HOSPITAL/CLINIC	NON-PROFIT ORGS	FEDERAL GOV'T	STATE/LOCAL GOV'T
ALL FIELDS								
1975	$23,200	$26,000	$30,500	$21,500	$21,800	$24,400	$26,300	$21,500
1985	44,800	52,000	50,600	40,800	37,800	43,900	48,400	36,000
SCIENTISTS								
1975	22,600	26,000	30,500	21,100	21,800	24,000	26,200	21,500
1985	42,500	50,500	50,400	40,000	37,700	40,500	47,900	35,800
PHYSICAL SCIENTISTS								
1975	23,900	25,900	24,100	21,400	22,600	23,900	26,000	19,000
1985	47,000	51,100	44,900	41,700	46,000	45,600	49,600	35,600
MATH SCIENTISTS								
1975	21,200	25,600	**	20,600	**	25,800	27,600	**
1985	42,100	50,200	**	40,600	**	36,800	48,100	**
COMPUTER SPECIALISTS								
1975	23,400	24,000	**	22,700	**	**	24,900	**
1985	46,000	48,700	60,900	44,000	**	47,300	50,500	33,200
ENVIRONMENTAL SCIENTISTS								
1975	23,500	26,200	25,500	21,200	**	23,400	27,500	19,600
1985	46,600	54,400	55,200	40,900	**	46,200	50,000	36,100
LIFE SCIENTISTS								
1975	22,200	25,400	35,400	21,000	24,000	22,600	25,300	21,000
1985	41,700	49,200	50,100	40,000	41,500	40,400	46,600	41,200
PSYCHOLOGISTS								
1975	22,100	30,500	30,800	20,900	21,300	24,200	26,800	21,500
1985	39,500	50,500	50,700	37,400	35,900	32,400	44,100	32,400
SOCIAL SCIENTISTS								
1975	22,200	28,600	26,200	21,200	**	25,700	28,800	25,900
1985	40,500	50,600	42,600	39,000	**	38,400	48,200	36,400
ENGINEERS								
1975	25,200	26,100	30,600	23,600	**	25,900	26,700	21,100
1985	52,400	55,200	69,200	48,600	**	55,900	50,800	40,600
AERO/ASTRO ENGINEERS								
1975	25,200	25,900	**	24,100	**	**	24,900	**
1985	53,800	56,600	**	53,100	**	**	51,800	**
CHEMICAL ENGINEERS								
1975	26,400	27,300	**	24,700	**	**	**	**
1985	55,700	58,600	**	48,100	**	**	**	**
CIVIL ENGINEERS								
1975	22,900	24,300	**	22,600	**	**	23,400	20,500
1985	48,500	50,400	**	47,100	**	**	**	**
ELEC./ELECTRON. ENGINEERS								
1975	25,000	25,900	**	23,800	**	**	23,500	**
1985	55,100	58,500	**	49,700	**	**	54,600	**
MECHANICAL ENGINEERS								
1975	23,800	24,500	**	22,700	**	**	26,400	**
1985	51,100	53,400	**	46,900	**	**	**	**
OTHER ENGINEERS								
1975	25,700	26,300	30,900	23,800	**	26,500	29,300	**
1985	52,300	54,600	60,600	49,900	**	57,100	50,400	**

**NO MEDIAN COMPUTED FOR GROUPS WITH FEWER THAN 20 INDIVIDUALS REPORTING SALARY

NOTE: MEDIANS COMPUTED FOR FULL-TIME EMPLOYED CIVILIANS ONLY.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-29. MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY: 1975 AND 1985

FIELD AND YEAR	TOTAL	R&D	MGMT. OF R&D	GEN-ERAL MGMT.	TEACH-ING	CON-SULT-ING
ALL FIELDS						
1975	$23,200	$23,000	$30,100	$28,600	$20,600	$25,500
1985	44,800	45,400	60,300	50,900	39,200	50,600
SCIENTISTS						
1975	22,600	22,700	30,000	28,000	20,300	25,400
1985	42,500	43,600	58,300	49,100	37,500	49,300
PHYSICAL SCIENTISTS						
1975	23,900	23,700	30,400	29,400	20,300	27,500
1985	47,000	46,600	60,600	56,500	39,000	58,300
MATH SCIENTISTS						
1975	21,200	22,700	31,400	27,100	19,900	25,600
1985	42,100	45,000	58,300	49,300	38,900	45,900
COMPUTER SPECIALISTS						
1975	23,400	23,000	30,600	27,400	22,100	**
1985	46,000	46,200	59,500	50,600	42,100	50,300
ENVIRONMENTAL SCIENTISTS						
1975	23,500	23,300	29,600	28,800	20,300	25,100
1985	46,600	45,700	57,000	55,800	39,400	51,500
LIFE SCIENTISTS						
1975	22,200	21,600	29,900	28,200	20,300	20,900
1985	41,700	40,500	57,700	50,200	37,400	45,500
PSYCHOLOGISTS						
1975	22,100	22,500	26,800	25,400	20,200	23,900
1985	39,500	39,700	50,800	43,300	36,700	44,100
SOCIAL SCIENTISTS						
1975	22,200	22,800	29,100	30,400	20,400	30,500
1985	40,500	42,500	51,400	47,800	36,800	48,800
ENGINEERS						
1975	25,200	23,800	30,400	30,700	22,900	25,600
1985	52,400	50,300	62,300	65,200	47,100	55,800
AERO/ASTRO ENGINEERS						
1975	25,200	23,700	32,400	**	24,500	**
1985	53,800	50,000	62,200	**	**	**
CHEMICAL ENGINEERS						
1975	26,400	25,000	30,300	33,100	23,400	**
1985	55,700	50,700	61,100	75,500	47,000	**
CIVIL ENGINEERS						
1975	22,900	21,700	26,700	28,200	22,000	24,100
1985	48,500	50,100	**	67,400	43,300	50,700
ELEC./ELECTRON. ENGINEERS						
1975	25,000	24,000	30,900	32,600	22,900	**
1985	55,100	52,400	68,500	65,800	47,400	**
MECHANICAL ENGINEERS						
1975	23,800	22,500	27,600	27,400	22,500	**
1985	51,100	49,700	60,600	**	46,200	**
OTHER ENGINEERS						
1975	25,700	23,800	30,600	30,800	23,400	26,600
1985	52,300	49,600	61,500	58,900	48,500	60,200

**NO MEDIAN COMPUTED FOR GROUPS WITH FEWER THAN 20 INDIVIDUALS REPORTING SALARY

NOTE: MEDIANS COMPUTED FOR FULL-TIME EMPLOYED CIVILIANS ONLY.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-30. MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS IN INDUSTRY BY FIELD AND PRIMARY WORK ACTIVITY: 1975 AND 1985

FIELD AND YEAR	TOTAL	R&D	MGMT. OF R&D	GEN-ERAL MGMT.	TEACH-ING	CON-SULT-ING
ALL FIELDS						
1975	$26,000	$24,000	$30,400	$32,000	**	$25,800
1985	52,000	48,700	62,500	69,300	57,600	53,700
SCIENTISTS						
1975	26,000	23,900	30,300	32,200	**	26,300
1985	50,500	47,100	60,900	66,600	45,700	50,900
PHYSICAL SCIENTISTS						
1975	25,900	24,000	30,200	32,500	**	28,400
1985	51,100	48,200	61,100	75,700	**	60,000
MATH SCIENTISTS						
1975	25,600	24,400	32,500	**	**	**
1985	50,200	48,100	**	**	**	52,700
COMPUTER SPECIALISTS						
1975	24,000	23,100	30,200	**	**	**
1985	48,700	47,400	63,300	55,500	**	50,600
ENVIRONMENTAL SCIENTISTS						
1975	26,200	25,300	30,300	30,200	**	25,400
1985	54,400	50,800	60,900	82,200	**	54,600
LIFE SCIENTISTS						
1975	25,400	22,700	30,300	28,700	**	20,900
1985	49,200	42,900	62,700	55,900	**	50,100
PSYCHOLOGISTS						
1975	30,500	24,500	34,400	42,000	**	30,400
1985	50,500	46,500	**	60,700	**	54,500
SOCIAL SCIENTISTS						
1975	28,600	24,000	32,000	36,800	**	30,800
1985	50,600	50,300	**	65,400	**	50,900
ENGINEERS						
1975	26,100	24,200	30,600	31,800	**	25,600
1985	55,200	50,500	64,800	70,800	**	58,200
AERO/ASTRO ENGINEERS						
1975	25,900	23,300	32,300	**	**	**
1985	56,600	49,400	64,300	**	**	**
CHEMICAL ENGINEERS						
1975	27,300	25,100	30,500	35,300	**	**
1985	58,600	50,900	60,900	**	**	**
CIVIL ENGINEERS						
1975	24,300	21,800	**	30,600	**	24,000
1985	50,400	50,200	**	**	**	52,100
ELEC./ELECTRON. ENGINEERS						
1975	25,900	24,400	32,100	30,800	**	**
1985	58,500	53,200	70,100	75,400	**	**
MECHANICAL ENGINEERS						
1975	24,500	22,700	27,100	**	**	**
1985	53,400	50,900	**	**	**	**
OTHER ENGINEERS						
1975	26,300	24,200	30,600	31,600	**	25,900
1985	54,600	49,900	62,600	59,500	**	60,400

**NO MEDIAN COMPUTED FOR GROUPS WITH FEWER THAN 20 INDIVIDUALS REPORTING SALARY

NOTE: MEDIANS COMPUTED FOR FULL-TIME EMPLOYED CIVILIANS ONLY.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-31. MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS IN 4-YEAR COLLEGES/UNIVERSITIES BY FIELD AND PRIMARY WORK ACTIVITY: 1975 AND 1985

FIELD AND YEAR	TOTAL	R&D	MGMT. OF R&D	GEN-ERAL MGMT.	TEACH-ING	CON-SULT-ING
ALL FIELDS						
1975	$21,500	$21,200	$28,100	$27,800	$20,600	$23,500
1985	40,800	41,400	56,300	50,300	39,300	38,500
SCIENTISTS						
1975	21,100	20,900	27,700	27,500	20,400	23,700
1985	40,000	40,600	55,900	48,800	37,700	38,200
PHYSICAL SCIENTISTS						
1975	21,400	22,000	29,300	27,200	20,600	**
1985	41,700	44,900	60,600	53,200	39,200	**
MATH SCIENTISTS						
1975	20,600	20,800	**	26,600	20,000	**
1985	40,600	43,700	**	49,400	39,200	**
COMPUTER SPECIALISTS						
1975	22,700	22,500	**	27,000	22,100	**
1985	44,000	45,000	**	47,800	42,300	**
ENVIRONMENTAL SCIENTISTS						
1975	21,200	20,400	26,400	28,400	20,500	**
1985	40,900	42,500	58,900	55,400	39,500	**
LIFE SCIENTISTS						
1975	21,000	20,600	29,000	28,600	20,300	**
1985	40,000	38,800	55,900	50,500	37,600	40,500
PSYCHOLOGISTS						
1975	20,900	22,000	24,800	25,800	20,200	**
1985	37,400	38,400	**	44,900	36,700	**
SOCIAL SCIENTISTS						
1975	21,200	21,600	26,200	28,800	20,400	**
1985	39,000	41,400	**	45,500	36,900	**
ENGINEERS						
1975	23,600	22,300	28,900	30,500	23,000	**
1985	48,600	47,700	57,500	62,200	46,600	**
AERO/ASTRO ENGINEERS						
1975	24,100	22,400	**	**	24,700	**
1985	53,100	**	**	**	**	**
CHEMICAL ENGINEERS						
1975	24,700	**	**	32,000	23,500	**
1985	48,100	41,600	**	**	47,600	**
CIVIL ENGINEERS						
1975	22,600	**	**	28,800	22,000	**
1985	47,100	**	**	**	43,200	**
ELEC./ELECTRON. ENGINEERS						
1975	23,800	23,700	**	34,200	22,900	**
1985	49,700	48,800	**	60,800	47,200	**
MECHANICAL ENGINEERS						
1975	22,700	20,100	**	**	22,600	**
1985	46,900	**	**	**	45,300	**
OTHER ENGINEERS						
1975	23,800	22,100	28,700	30,600	23,400	**
1985	49,900	48,800	58,300	60,700	48,300	**

**NO MEDIAN COMPUTED FOR GROUPS WITH FEWER THAN 20 INDIVIDUALS REPORTING SALARY

NOTE: MEDIANS COMPUTED FOR FULL-TIME EMPLOYED CIVILIANS ONLY.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-32. MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, AND RACIAL/ETHNIC GROUP: 1975 AND 1985

FIELD AND YEAR	TOTAL	SEX		RACE					
		MEN	WOMEN	WHITE	BLACK	AMERICAN INDIAN	ASIAN	OTHER	HISPANIC(1)
ALL FIELDS									
1975	23,200	23,500	19,100	23,300	22,800	19,100	21,500	20,600	22,500
1985	44,800	46,000	35,500	44,800	40,100	42,100	45,500	40,300	42,200
SCIENTISTS									
1975	22,600	23,000	19,000	22,700	22,600	18,900	21,000	20,400	22,200
1985	42,500	44,300	35,300	42,600	39,400	40,200	42,600	36,900	40,600
PHYSICAL SCIENTISTS									
1975	23,900	24,100	19,100	24,100	23,100	**	20,900	**	22,000
1985	47,000	47,900	38,600	47,600	42,700	**	44,300	**	47,300
MATH SCIENTISTS									
1975	21,200	21,400	18,400	21,200	21,700	**	20,700	**	21,200
1985	42,100	42,600	35,400	42,200	41,200	**	39,500	**	39,300
COMPUTER SPECIALISTS									
1975	23,400	23,700	18,000	23,500	**	**	21,000	**	**
1985	46,000	46,700	38,600	45,900	**	**	46,900	**	48,600
ENVIRONMENTAL SCIENTISTS									
1975	23,500	23,600	19,100	23,500	**	**	21,900	**	**
1985	46,600	47,300	38,700	46,100	**	**	53,000	**	40,600
LIFE SCIENTISTS									
1975	22,200	22,600	19,000	22,300	21,900	**	20,700	**	22,300
1985	41,700	43,400	35,100	41,800	40,000	39,800	41,000	**	40,600
PSYCHOLOGISTS									
1975	22,100	22,700	19,600	22,000	23,100	**	21,700	**	22,800
1985	39,500	40,700	34,800	39,700	35,400	**	37,200	**	36,600
SOCIAL SCIENTISTS									
1975	22,200	22,600	18,700	22,200	22,400	**	21,400	**	22,500
1985	40,500	41,600	34,600	40,600	38,600	**	39,600	**	36,500
ENGINEERS									
1975	25,200	25,200	21,200	25,500	25,100	**	22,400	**	23,900
1985	52,400	52,600	43,900	53,600	45,600	**	50,300	**	50,100
AERO/ASTRO ENGINEERS									
1975	25,200	25,300	**	25,700	**	**	23,100	**	**
1985	53,800	54,000	44,500	55,100	**	**	40,900	**	**
CHEMICAL ENGINEERS									
1975	26,400	26,400	**	26,900	**	**	22,600	**	**
1985	55,700	55,800	43,500	60,800	**	**	50,000	**	**
CIVIL ENGINEERS									
1975	22,900	22,900	**	23,300	**	**	20,800	**	**
1985	48,500	48,700	37,000	48,600	**	**	45,100	**	**
ELEC./ELECTRON. ENGINEERS									
1975	25,000	25,000	**	25,300	**	**	23,100	**	**
1985	55,100	55,300	45,600	55,700	**	**	52,900	**	**
MECHANICAL ENGINEERS									
1975	23,800	23,800	**	24,200	**	**	21,700	**	**
1985	51,100	51,300	42,000	51,700	**	**	50,600	**	**
OTHER ENGINEERS									
1975	25,700	25,700	21,000	25,900	**	**	22,600	**	**
1985	52,300	52,500	44,200	52,900	51,000	**	50,400	**	60,000

(1)HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

**NO MEDIAN COMPUTED FOR GROUPS WITH FEWER THAN 20 INDIVIDUALS REPORTING SALARY

NOTE: MEDIAN COMPUTED FOR FULL-TIME EMPLOYED CIVILIANS ONLY.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-33. MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND YEARS OF PROFESSIONAL EXPERIENCE: 1985

FIELD	TOTAL	YEARS OF PROFESSIONAL EXPERIENCE: LESS THAN 1 YEAR	1-4 YEARS	5-9 YEARS	10-14 YEARS	15-19 YEARS	20-24 YEARS	25-29 YEARS	30-34 YEARS	35 OR MORE YEARS
ALL FIELDS	$44,800	$30,400	$33,700	$38,400	$44,800	$49,100	$51,300	$54,400	$58,800	$60,200
SCIENTISTS	42,500	27,000	31,600	36,400	42,200	47,000	50,000	52,500	56,900	60,000
PHYSICAL SCIENTISTS	47,000	**	37,200	42,000	46,000	48,900	51,100	55,200	59,200	60,600
MATH SCIENTISTS	42,100	**	31,200	34,500	39,400	45,500	48,700	53,600	54,700	55,900
COMPUTER SPECIALISTS	46,000	**	42,400	43,300	46,900	49,300	50,100	70,300	57,400	**
ENVIRONMENTAL SCIENTISTS	46,600	**	31,400	40,900	47,300	51,100	54,900	60,600	58,100	61,600
LIFE SCIENTISTS	41,700	26,100	30,400	35,000	41,000	47,000	50,200	52,600	57,000	56,600
PSYCHOLOGISTS	39,500	**	29,600	35,500	39,200	42,700	46,800	50,600	53,000	58,200
SOCIAL SCIENTISTS	40,500	**	30,400	34,900	40,600	47,000	46,900	50,600	55,900	59,600
ENGINEERS	52,400	**	41,000	48,100	52,500	57,700	60,400	60,000	67,100	60,800
AERO/ASTRO ENGINEERS	53,800	**	41,800	45,400	55,300	**	**	**	**	**
CHEMICAL ENGINEERS	55,700	**	40,200	50,400	56,200	65,100	69,100	**	72,000	**
CIVIL ENGINEERS	48,500	**	37,900	42,200	50,200	51,100	**	**	**	**
ELEC/ELECTRON ENGINEERS	55,100	**	43,400	50,200	55,300	60,300	62,200	64,500	69,600	**
MECHANICAL ENGINEERS	51,100	**	41,400	44,100	53,000	53,600	**	**	**	**
OTHER ENGINEERS	52,300	**	41,300	48,200	51,600	57,800	58,500	59,900	64,700	60,000

** NO MEDIAN COMPUTED FOR GROUPS WITH FEWER THAN 20 INDIVIDUALS REPORTING SALARY

NOTE: MEDIANS COMPUTED FOR FULL-TIME EMPLOYED CIVILIANS ONLY.

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-34. SELECTED EMPLOYMENT RATES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, AND RACIAL/ETHNIC GROUP: 1975

FIELD, SEX, AND RACIAL/ETHNIC GROUP(2)	EMPLOYMENT RATES(1) LABOR FORCE PARTICIPATION RATE	UNEMPLOYMENT RATE	S/E EMPLOYMENT RATE
TOTAL			
TOTAL	95.6	1.0	93.9
SEX			
MEN	96.3	.8	93.9
WOMEN	89.1	2.9	92.9
RACE			
WHITE	95.6	.9	93.9
BLACK	96.6	1.0	86.5
NATIVE AMERICAN	98.6	*	95.3
ASIAN/PACIFIC ISLANDER	98.8	1.6	96.4
ETHNICITY			
HISPANIC	96.1	.5	94.2
SCIENTISTS			
TOTAL	95.1	1.0	93.5
SEX			
MEN	95.8	.8	93.5
WOMEN	89.1	2.9	92.9
RACE			
WHITE	95.2	1.0	93.5
BLACK	96.4	.8	85.7
NATIVE AMERICAN	98.6	*	95.1
ASIAN/PACIFIC ISLANDER	98.4	2.1	95.9
ETHNICITY			
HISPANIC	96.4	.5	94.0
PHYSICAL SCIENTISTS			
TOTAL	94.8	1.4	91.6
SEX			
MEN	95.3	1.2	91.8
WOMEN	84.6	4.7	87.7
RACE			
WHITE	94.8	1.3	91.5
BLACK	94.2	1.9	84.8
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	99.0	3.4	96.9
ETHNICITY			
HISPANIC	99.7	*	92.8
MATH SCIENTISTS			
TOTAL	96.6	.7	94.4
SEX			
MEN	97.2	.6	94.6
WOMEN	88.5	1.5	92.1
RACE			
WHITE	96.5	.7	94.3
BLACK	100.0	*	100.0
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	99.2	.8	97.9
ETHNICITY			
HISPANIC	97.3	*	93.7
COMPUTER SPECIALISTS			
TOTAL	99.9	.1	99.1
SEX			
MEN	100.0	.1	99.1
WOMEN	98.0	*	99.3
RACE			
WHITE	100.0	*	99.0
BLACK	**	**	**
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	98.9	*	100.0
ETHNICITY			
HISPANIC	**	**	**

(1) SEE TECHNICAL NOTES FOR DEFINITION OF RATES.
(2) HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* LESS THAN 0.05 PERCENT
** TOO FEW CASES TO ESTIMATE

TABLE B-34. SELECTED EMPLOYMENT RATES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, AND RACIAL/ETHNIC GROUP: 1975

FIELD, SEX, AND RACIAL/ETHNIC GROUP(2)	EMPLOYMENT RATES(1) LABOR FORCE PARTICIPATION RATE	UNEMPLOYMENT RATE	S/E EMPLOYMENT RATE
ENVIRONMENTAL SCIENTISTS			
TOTAL	97.8	.8	97.3
SEX			
MEN	97.9	.7	97.3
WOMEN	93.9	4.1	98.5
RACE			
WHITE	98.0	.8	97.2
BLACK	**	**	**
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	98.3	1.7	100.0
ETHNICITY			
HISPANIC	100.0	*	95.4
LIFE SCIENTISTS			
TOTAL	93.7	1.0	96.3
SEX			
MEN	94.9	.7	96.4
WOMEN	86.2	3.4	95.5
RACE			
WHITE	93.9	1.0	96.3
BLACK	94.6	*	89.8
NATIVE AMERICAN	95.9	*	92.9
ASIAN/PACIFIC ISLANDER	97.6	1.9	97.4
ETHNICITY			
HISPANIC	93.6	.2	99.0
PSYCHOLOGISTS			
TOTAL	96.6	.7	95.3
SEX			
MEN	97.7	.5	95.5
WOMEN	93.0	1.6	94.5
RACE			
WHITE	96.7	.8	95.6
BLACK	100.0	1.0	79.2
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	97.3	.7	96.9
ETHNICITY			
HISPANIC	96.8	*	93.3
SOCIAL SCIENTISTS			
TOTAL	94.9	1.0	87.6
SEX			
MEN	95.3	.6	87.6
WOMEN	91.6	3.4	88.2
RACE			
WHITE	94.8	.9	87.8
BLACK	97.3	.7	81.5
NATIVE AMERICAN	100.0	*	90.9
ASIAN/PACIFIC ISLANDER	99.3	1.2	87.3
ETHNICITY			
HISPANIC	96.4	2.6	83.8
ENGINEERS			
TOTAL	98.2	.7	95.8
SEX			
MEN	98.3	.7	95.8
WOMEN	86.8	1.7	97.9
RACE			
WHITE	98.2	.7	95.7
BLACK	100.0	3.5	99.3
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	99.6	.4	97.4
ETHNICITY			
HISPANIC	95.1	.6	95.3

(1) SEE TECHNICAL NOTES FOR DEFINITION OF RATES.
(2) HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* LESS THAN 0.05 PERCENT
** TOO FEW CASES TO ESTIMATE

TABLE B-34. SELECTED EMPLOYMENT RATES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, AND RACIAL/ETHNIC GROUP: 1975

FIELD, SEX, AND RACIAL/ETHNIC GROUP(2)	EMPLOYMENT RATES(1) LABOR FORCE PARTICIPATION RATE	UNEMPLOYMENT RATE	S/E EMPLOYMENT RATE
AERO/ASTRO ENGINEERS			
TOTAL	98.1	*	96.0
SEX			
MEN	98.2	*	96.0
WOMEN	**	**	**
RACE			
WHITE	97.8	.1	96.0
BLACK	**	**	**
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	100.0	*	94.3
ETHNICITY			
HISPANIC	**	**	**
CHEMICAL ENGINEERS			
TOTAL	97.0	1.1	93.6
SEX			
MEN	97.1	1.1	93.6
WOMEN	**	**	**
RACE			
WHITE	96.8	1.0	93.5
BLACK	**	**	**
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	99.6	2.9	94.7
ETHNICITY			
HISPANIC	100.0	*	91.4
CIVIL ENGINEERS			
TOTAL	99.2	.4	94.7
SEX			
MEN	99.2	.4	94.7
WOMEN	**	**	**
RACE			
WHITE	99.2	.3	93.7
BLACK	**	**	**
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	98.7	*	98.8
ETHNICITY			
HISPANIC	100.0	*	91.4
ELEC./ELECTRON. ENGINEERS			
TOTAL	98.4	.8	96.3
SEX			
MEN	98.4	.8	96.3
WOMEN	**	**	**
RACE			
WHITE	98.2	1.0	96.4
BLACK	**	**	**
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	99.9	*	96.9
ETHNICITY			
HISPANIC	100.0	*	88.8
MECHANICAL ENGINEERS			
TOTAL	98.9	.8	96.3
SEX			
MEN	99.0	.8	96.3
WOMEN	**	**	**
RACE			
WHITE	98.9	.9	95.7
BLACK	**	**	**
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	100.0	*	100.0
ETHNICITY			
HISPANIC	**	**	**

(1) SEE TECHNICAL NOTES FOR DEFINITION OF RATES.
(2) HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* LESS THAN 0.05 PERCENT
** TOO FEW CASES TO ESTIMATE

TABLE B-34. SELECTED EMPLOYMENT RATES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, AND RACIAL/ETHNIC GROUP: 1975

FIELD, SEX, AND RACIAL/ETHNIC GROUP(2)	EMPLOYMENT RATES(1) LABOR FORCE PARTICIPATION RATE	UNEMPLOYMENT RATE	S/E EMPLOYMENT RATE
OTHER ENGINEERS			
TOTAL	98.1	.5	96.3
SEX			
MEN	98.2	.5	96.3
WOMEN	87.3	1.5	97.0
RACE			
WHITE	98.2	.6	96.3
BLACK	**	**	**
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	99.7	.1	97.4
ETHNICITY			
HISPANIC	85.6	1.9	100.0

(1) SEE TECHNICAL NOTES FOR DEFINITION OF RATES.
(2) HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* LESS THAN 0.05 PERCENT
** TOO FEW CASES TO ESTIMATE

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

TABLE B-35. SELECTED EMPLOYMENT RATES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, AND RACIAL/ETHNIC GROUP: 1985

FIELD, SEX, AND RACIAL/ETHNIC GROUP(2)	EMPLOYMENT RATES(1) LABOR FORCE PARTICIPATION RATE	UNEMPLOYMENT RATE	S/E EMPLOYMENT RATE
TOTAL			
TOTAL	95.1	.8	91.3
SEX			
MEN	95.4	.7	91.5
WOMEN	93.1	1.8	89.8
RACE			
WHITE	94.7	.8	91.0
BLACK	97.5	1.2	85.6
NATIVE AMERICAN	96.1	.4	90.4
ASIAN/PACIFIC ISLANDER	98.2	.9	94.9
ETHNICITY			
HISPANIC	96.7	1.6	91.1
SCIENTISTS			
TOTAL	94.6	.9	90.8
SEX			
MEN	95.0	.7	91.1
WOMEN	93.0	1.9	89.6
RACE			
WHITE	94.3	.9	90.7
BLACK	97.3	1.3	84.5
NATIVE AMERICAN	95.3	.5	88.5
ASIAN/PACIFIC ISLANDER	97.7	1.0	94.5
ETHNICITY			
HISPANIC	97.9	1.4	92.5
PHYSICAL SCIENTISTS			
TOTAL	93.2	.9	90.9
SEX			
MEN	93.4	.8	90.9
WOMEN	90.6	2.2	90.4
RACE			
WHITE	92.6	1.0	90.3
BLACK	100.0	.4	96.4
NATIVE AMERICAN	100.0	*	100.0
ASIAN/PACIFIC ISLANDER	97.9	.4	95.9
ETHNICITY			
HISPANIC	99.7	.6	97.8
MATH SCIENTISTS			
TOTAL	96.3	.5	92.4
SEX			
MEN	96.7	.4	92.4
WOMEN	92.9	1.0	92.8
RACE			
WHITE	96.1	.5	92.4
BLACK	100.0	*	94.0
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	98.4	.4	93.5
ETHNICITY			
HISPANIC	99.2	*	100.0
COMPUTER SPECIALISTS			
TOTAL	99.9	*	99.2
SEX			
MEN	100.0	*	99.2
WOMEN	99.2	.1	99.6
RACE			
WHITE	99.9	*	99.1
BLACK	100.0	*	98.8
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	100.0	.2	100.0
ETHNICITY			
HISPANIC	100.0	*	100.0

(1) SEE TECHNICAL NOTES FOR DEFINITION OF RATES.
(2) HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* LESS THAN 0.05 PERCENT
** TOO FEW CASES TO ESTIMATE

TABLE B-35. SELECTED EMPLOYMENT RATES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, AND RACIAL/ETHNIC GROUP: 1985

FIELD, SEX, AND RACIAL/ETHNIC GROUP(2)	EMPLOYMENT RATES(1) LABOR FORCE PARTICIPATION RATE	UNEMPLOYMENT RATE	S/E EMPLOYMENT RATE
ENVIRONMENTAL SCIENTISTS			
TOTAL	96.8	.6	96.3
SEX			
MEN	96.8	.6	96.4
WOMEN	96.1	1.2	95.6
RACE			
WHITE	96.6	.7	96.2
BLACK	99.0	*	100.0
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	98.9	.2	97.3
ETHNICITY			
HISPANIC	100.0	*	89.6
LIFE SCIENTISTS			
TOTAL	93.7	1.1	94.8
SEX			
MEN	94.4	.9	95.1
WOMEN	91.2	1.8	93.7
RACE			
WHITE	93.5	1.1	94.8
BLACK	94.4	1.3	89.0
NATIVE AMERICAN	88.9	1.7	95.8
ASIAN/PACIFIC ISLANDER	96.9	1.7	96.2
ETHNICITY			
HISPANIC	96.9	1.6	97.3
PSYCHOLOGISTS			
TOTAL	95.9	.9	91.9
SEX			
MEN	96.3	.6	91.7
WOMEN	95.0	1.4	92.4
RACE			
WHITE	95.8	.8	92.2
BLACK	99.2	.8	80.6
NATIVE AMERICAN	96.3	*	92.3
ASIAN/PACIFIC ISLANDER	99.0	2.5	87.8
ETHNICITY			
HISPANIC	95.0	2.7	88.6
SOCIAL SCIENTISTS			
TOTAL	94.4	1.0	79.8
SEX			
MEN	94.7	.6	80.7
WOMEN	93.1	2.7	76.0
RACE			
WHITE	94.1	1.0	79.5
BLACK	97.3	2.0	77.4
NATIVE AMERICAN	97.7	*	70.1
ASIAN/PACIFIC ISLANDER	97.3	1.2	87.5
ETHNICITY			
HISPANIC	99.2	1.4	82.3
ENGINEERS			
TOTAL	97.5	.5	93.4
SEX			
MEN	97.5	.5	93.3
WOMEN	97.7	.9	96.9
RACE			
WHITE	97.1	.5	92.8
BLACK	99.4	*	96.5
NATIVE AMERICAN	100.0	*	100.0
ASIAN/PACIFIC ISLANDER	99.1	.8	95.6
ETHNICITY			
HISPANIC	89.9	2.9	82.6

(1) SEE TECHNICAL NOTES FOR DEFINITION OF RATES.
(2) HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* LESS THAN 0.05 PERCENT
** TOO FEW CASES TO ESTIMATE

TABLE B-35. SELECTED EMPLOYMENT RATES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, AND RACIAL/ETHNIC GROUP: 1985

FIELD, SEX, AND RACIAL/ETHNIC GROUP(2)	EMPLOYMENT RATES(1) LABOR FORCE PARTICIPATION RATE	UNEMPLOYMENT RATE	S/E EMPLOYMENT RATE
AERO/ASTRO ENGINEERS			
TOTAL	99.9	.5	94.6
SEX			
MEN	100.0	.5	94.5
WOMEN	97.9	*	100.0
RACE			
WHITE	99.9	.5	93.7
BLACK	**	**	**
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	100.0	.6	100.0
ETHNICITY			
HISPANIC	**	**	**
CHEMICAL ENGINEERS			
TOTAL	94.5	1.8	87.9
SEX			
MEN	94.6	1.7	87.9
WOMEN	92.9	3.8	93.1
RACE			
WHITE	93.7	1.4	85.0
BLACK	100.0	*	95.5
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	96.7	2.8	95.4
ETHNICITY			
HISPANIC	100.0	*	95.6
CIVIL ENGINEERS			
TOTAL	96.1	.8	92.7
SEX			
MEN	96.1	.7	92.7
WOMEN	96.9	4.2	94.5
RACE			
WHITE	95.6	1.0	91.3
BLACK	100.0	*	100.0
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	97.8	*	97.6
ETHNICITY			
HISPANIC	100.0	*	100.0
ELEC./ELECTRON. ENGINEERS			
TOTAL	98.3	.6	94.7
SEX			
MEN	98.3	.6	94.6
WOMEN	99.4	*	98.8
RACE			
WHITE	98.0	.7	93.9
BLACK	100.0	*	100.0
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	99.3	*	97.6
ETHNICITY			
HISPANIC	74.5	*	89.0
MECHANICAL ENGINEERS			
TOTAL	97.2	*	92.2
SEX			
MEN	97.2	*	92.1
WOMEN	95.1	*	96.6
RACE			
WHITE	96.4	*	93.7
BLACK	96.4	*	100.0
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	100.0	*	85.4
ETHNICITY			
HISPANIC	80.5	*	100.0

(1) SEE TECHNICAL NOTES FOR DEFINITION OF RATES.
(2) HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* LESS THAN 0.05 PERCENT
** TOO FEW CASES TO ESTIMATE

TABLE B-35. SELECTED EMPLOYMENT RATES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX, AND RACIAL/ETHNIC GROUP: 1985

FIELD, SEX, AND RACIAL/ETHNIC GROUP(2)	EMPLOYMENT RATES(1) LABOR FORCE PARTICIPATION RATE	UNEMPLOYMENT RATE	S/E EMPLOYMENT RATE
OTHER ENGINEERS			
TOTAL	98.0	.3	94.3
SEX			
MEN	98.0	.3	94.3
WOMEN	97.8	.6	96.5
RACE			
WHITE	97.6	.2	93.9
BLACK	100.0	*	90.9
NATIVE AMERICAN	**	**	**
ASIAN/PACIFIC ISLANDER	100.0	.8	96.7
ETHNICITY			
HISPANIC	96.2	5.7	70.2

(1) SEE TECHNICAL NOTES FOR DEFINITION OF RATES.
(2) HISPANICS INCLUDE MEMBERS OF ALL RACIAL GROUPS.

* LESS THAN 0.05 PERCENT
** TOO FEW CASES TO ESTIMATE

SOURCE: NATIONAL SCIENCE FOUNDATION, SRS

appendix c

reproduction of 1985 survey questionnaire

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1985 Survey of Doctorate Recipients 111

OMB No. 3145-0020

1985 SURVEY OF DOCTORATE RECIPIENTS

CONDUCTED BY THE NATIONAL RESEARCH COUNCIL WITH THE SUPPORT OF THE NATIONAL SCIENCE FOUNDATION, THE NATIONAL ENDOWMENT FOR THE HUMANITIES, THE NATIONAL INSTITUTES OF HEALTH, AND THE DEPARTMENT OF ENERGY

NOTE: THIS INFORMATION IS SOLICITED UNDER THE AUTHORITY OF THE NATIONAL SCIENCE FOUNDATION ACT OF 1950, AS AMENDED. ALL INFORMATION YOU PROVIDE WILL BE TREATED AS CONFIDENTIAL, WILL BE SAFEGUARDED IN ACCORDANCE WITH THE PROVISIONS OF THE PRIVACY ACT OF 1974, AND WILL BE USED FOR STATISTICAL PURPOSES ONLY. INFORMATION WILL BE RELEASED ONLY IN THE FORM OF STATISTICAL SUMMARIES OR IN A FORM WHICH DOES NOT IDENTIFY INFORMATION ABOUT ANY PARTICULAR PERSON. YOUR RESPONSE IS ENTIRELY VOLUNTARY AND YOUR FAILURE TO PROVIDE SOME OR ALL OF THE REQUESTED INFORMATION WILL IN NO WAY ADVERSELY AFFECT YOU.

If your name and address are incorrect, please enter correct information below.

_____

_____

_____ (10-11)

[redacted]

1. **Institution/Year of Doctorate** _____ (12-19)

2. **Date of Birth** _____ (20-24)

3. **Marital Status** _____ (25)

4a. What is your racial background?

1 ☐ American Indian or Alaskan Native
2 ☐ Asian or Pacific Islander
3 ☐ Black
4 ☐ White (26)

4b. Is your ethnic heritage Hispanic?

1 ☐ Yes
2 ☐ No (27)

If YES, is it:

1 ☐ Mexican-American
2 ☐ Puerto Rican
3 ☐ Other Hispanic (28)

5. Do you have any children living with you who are:

Under 6 years of age? 1 ☐ Yes How many? _____ (30)
2 ☐ No (29)

Between 6 and 18 years of age? 1 ☐ Yes How many? _____ (32)
2 ☐ No (31)

6. Are you physically handicapped?

1 ☐ Yes 2 ☐ No (33)

If Yes, what is the nature of your handicap(s)? (Mark as many as apply)

1 ☐ Visual
2 ☐ Auditory
3 ☐ Ambulatory
4 ☐ Other, specify_____ (34-37)

7. Citizenship

1 ☐ U.S. Native Born
2 ☐ U.S. Naturalized
3 ☐ Non-U.S., Immigrant (Perm. Res.)
4 ☐ Non-U.S., Non-Immigrant (Temp. Res.) (38)

IF NON-U.S., specify country of citizenship

_____ (39-40)

8. Since receiving the doctorate, how many full-time equivalent years of professional work experience have you had? _____ **Years(s)** (41-42)

9. What was your employment status (includes postdoctoral appointment*) during February 1985? ☐ Circle your selection and enter number from below (43)

1. Employed full-time (Skip to #13)
2. Employed part-time
   If you were employed part-time, were you seeking full-time employment?
   A ☐ Yes B ☐ No (44)
3. Postdoctoral appointment*
   If you held a postdoctoral appointment, was it
   A ☐ Full-time (Skip to #13) B ☐ Part-time (45)
4. Unemployed and seeking employment (Skip to #11)
5. Not employed and not seeking employment (Skip to #12)
6. Retired and not employed (Skip to #28)
7. Other, specify _____

*Temporary appointment in academia, industry or government, the primary purpose of which is to provide for continued education or experience in research.

10. If you were employed part-time during FEBRUARY 1985, what was the MOST important reason for being in part-time status?

☐ Enter number from below (46)

1. Part-time employment preferred
2. Full-time position not available
3. Constraints due to family or marital status
4. Other, specify _____

(Skip to #13)

11. If you were unemployed and seeking employment during February 1985, was your job search restricted by:

☐ Enter number from below (47)

1. Geographic location
2. Family responsibilities
3. Need for part-time employment
4. Other, specify _____
5. No restrictions (Skip to #28)

12. If you were not employed and not seeking work during February 1985, what was the most important reason for not seeking work?

☐ Enter number from below (48)

1. Temporarily absent for health or personal reasons
2. Tending to family responsibilities
3. Suitable job not available
4. Other, specify _____

(Skip to #28)

13. Please give the name of your principal employer (company, organization, postdoctoral institution, etc. or, if self employed, write "self") and actual place of employment during FEBRUARY 1985.

_____
Name of Employer (49-56)

_____
City State ZIP (57-65)

14. From the Employment Specialties List on page 4 select and enter both the number and title of the employment specialty most closely related to your principal employment or postdoctoral appointment during FEBRUARY 1985. Write in your specialty if it is not on the list.

_____
Number Title of Employment Specialty (66-68)

15. Which category below best describes the type of your principal employment OR postdoctoral appointment during FEBRUARY 1985?

☐ Enter number from below (69-70)

1. Business or industry (including self-employed)
2. Junior college, 2-year college, technical institute
3. Medical school (including university affiliated hospital or medical center)
4. 4-year college
5. University, other than medical school
6. Elementary or secondary school system
7. Private foundation
8. Hospital or clinic
9. U.S. military service, active duty, or Commissioned Corps, e.g., USPHS, NOAA
10. U.S. government, civilian employee
11. State government
12. Local or other government, specify _____
13. Nonprofit organization, other than those listed above
14. Other, specify _____

16. If you were employed during FEBRUARY 1985 in a speciality field other than your field of Ph.D., what was the MOST important reason for being in that position?

☐ Enter number from below (71)

1. Better pay
2. More attractive career options
3. Preferred specific geographic location
4. Constraints due to family or marital status
5. Position in Ph.D. field not available
6. Promoted into new field
7. Other, specify _____

17. If your doctorate is in a humanities field and you were employed in a non-academic job in FEBRUARY 1985, what was the MOST important reason for your decision to enter the job?

☐ Enter number from below (72)

1. Better pay
2. More attractive career options
3. Preferred specific geographic location
4. Constraints due to family or marital status
5. Academic position not available
6. Other, specify _____

18. If you were employed by an academic institution during FEBRUARY 1985,

A. What was the rank of your position?

☐ Enter number from below (73)

FACULTY:
1. Professor
2. Associate professor
3. Assistant professor
4. Instructor
5. Administrator
6. Other, specify _____ *Title*

NONFACULTY:
7. Teaching staff
8. Research staff
9. Other, specify _____ *Title*

B. What was your tenure status?

1 ☐ Tenured, Year _____ (75-76)
2 ☐ Not Tenured, in tenure-track position
3 ☐ Not Tenured, not in tenure-track position (74)

19. What is your best estimate of the percentage of your professional work time that you devoted to each of the following activities during a typical week in your principal job? (Total should equal 100%)

	%		%
1.	___ Teaching (10)	11.	___ Operations – production, maintenance, construction, installation (30)
2.	___ Basic research (12)	12.	___ Quality control, testing, evaluation (32)
3.	___ Applied research (14)	13.	___ Sales, marketing, purchasing, estimating (34)
4.	___ Development of equipment, products, systems, data (16)	14.	___ Archival work (36)
5.	___ Design (18)	15.	___ Curatorial work (38)
6.	___ Writing, editing (20)	16.	___ Performing arts (40)
7.	___ Professional services to individuals (22)	17.	___ Other, specify _____ (42)
8.	___ Management of R&D (24)		
9.	___ Management of educational/other programs (26)		TOTAL = 100%
10.	___ Consulting (28)		

a. What were your primary and secondary work activities? (Enter number 1-17 from question above) ☐ Primary (44-45) ☐ Secondary (46-47)

20. What was the basic annual salary* associated with your principal professional employment during FEBRUARY 1985? If you were on a postdoctoral appointment (see question 9 for definition), what was your stipend plus allowances?

$_____ per year (48-50)

Check whether salary was for ☐ 9-10 months or ☐ 11-12 months (51)

*Basic salary is your annual salary before deductions for income tax, social security, retirement, etc., but does not include bonuses, overtime, summer teaching, or other payment for professional work.

21a. After receiving your doctorate, did you have to acquire formal training in any of the following areas in order to obtain your present position?

1 ☐ Yes 2 ☐ No (52) **IF YES**, specify below

1. ___ Foreign languages
2. ___ Computer science
3. ___ Management and administration
4. ___ Survey research and statistics
5. ___ Other, specify _____ (53-57)

21b. How long have you been in your present position? _____ Year(s) (58-59)

22. Was any of your work during FEBRUARY 1985 supported or sponsored by U.S. Government funds?

1 ☐ Yes 2 ☐ No 3 ☐ Don't Know (60)

IF YES, which federal agencies or departments were supporting the work?

Enter number(s) from the list of Federal Supporting Agencies on page 4.

_____ (61-72)

23. Listed below are selected topics of national interest. If you devoted a significant proportion of your professional time to any of these problem areas during FEBRUARY 1985, please give the corresponding number of the ONE on which you spent the MOST time. ☐ Enter number from below (73-74)

1. Energy or fuel
2. Health
3. Defense
4. Environ. protection, pollution control
5. Education (other than teaching)
6. Space
7. Crime prevention and control
8. Food and other agricultural products
9. Natural resources, other than fuel or food
10. Community development and services
11. Housing (planning, design, construction)
12. Transportation, communications
13. Cultural life
14. Other area, specify _____

If you selected [illegible] in question #23, please answer the following questions. Otherwise please skip to #28.

24. What percent of your professional time did you devote to energy or fuel activities during a typical week? _____ percent (75-76)

25. From the list below, give the corresponding number of the ONE energy source that involved the LARGEST proportion of your energy-related work during FEBRUARY 1985. ☐ Enter number from below (77)

1. Coal and coal products
2. Petroleum (including oil shale and tar sands) or natural gas
3. Fission
4. Fusion
5. Hydroenergy
6. Direct solar (including space and water heating, thermal, electric)
7. Indirect solar (winds, tides, biomass, etc.)
8. Geothermal
9. Other, specify _____

26. Please read the following list of energy-related activities and give the corresponding number(s) from the list below of the activity(ies) in which you were engaged during FEBRUARY 1985. Enter number(s) from below

_____ (10-29)

1. Exploration
2. Extraction (gas, oil, mining)
3. Manufacture of energy-related components or products
4. Fuel processing (including refining and enriching)
5. Electric power generation
6. Transportation, transmission, distribution of fuel or energy
7. Energy storage
8. Energy utilization, management
9. Fuel reprocessing or disposal
10. Energy conservation
11. Environmental impact (health, economic, etc.)
12. Education, training
13. Research and development
14. Other, specify _____

27. Please enter the number 1-14 from question #26 that BEST describes the activity in which you spent MOST of your energy-related time. ☐ (30-31)

28. Thank you for completing this questionnaire. Please return the completed form in the enclosed envelope to the National Research Council, JH630, 2101 Constitution Avenue, Washington, D.C. 20418.

EMPLOYMENT SPECIALTIES LIST

MATHEMATICAL SCIENCES

000 - Algebra
010 - Analysis & Functional Analysis
020 - Geometry
030 - Logic (see also 834)
040 - Number Theory
052 - Probability
055 - Math. Statistics (see also 544, 670, 725, 727)
060 - Topology
082 - Operations Research (see also 478)
085 - Applied Mathematics
089 - Combinatorics & Finite Mathematics
098 - Mathematics, General
099 - Mathematics, Other*

COMPUTER AND INFORMATION SCIENCES

071 - Theory
072 - Software Systems
073 - Hardware Systems
074 - Intelligent Systems
079 - Computer Sciences, Other* (see also 437, 476)
081 - Information Sci. & Systems*

PHYSICS & ASTRONOMY

101 - Astronomy
102 - Astrophysics
110 - Atomic & Molecular
120 - Electromagnetism
132 - Acoustics
134 - Fluids
135 - Plasma
136 - Optics
140 - Elementary Particles
150 - Nuclear Structure
157 - Polymer
160 - Solid State
198 - Physics, General
199 - Physics, Other*

CHEMISTRY

200 - Analytical
210 - Inorganic
215 - Synthetic Inorganic & Organometallic
220 - Organic
225 - Synthetic Organic & Natural Products
230 - Nuclear
240 - Physical
250 - Theoretical
255 - Structural
260 - Agricultural & Food
270 - Pharmaceutical
275 - Polymer
280 - Biochemistry (see also 540)
298 - Chemistry, General
299 - Chemistry, Other*

EARTH, ENVIRONMENTAL, AND MARINE SCIENCES

301 - Mineralogy, Petrology
305 - Geochemistry
310 - Stratigraphy, Sedimentation
320 - Paleontology
330 - Structural Geology
341 - Geophysics (Solid Earth)
350 - Geomorph. & Glacial Geology
391 - Applied Geol., Geol. Engr. & Econ. Geol.
398 - Earth Sciences, General
399 - Earth Sciences, Other*
381 - Atmospheric Physics & Chemistry
382 - Atmospheric Dynamics
383 - Atmos. & Meteorol. Sci., Other*
388 - Environmental Sciences, General (see also 480, 528)
389 - Environmental Sciences, Other*
360 - Hydrology & Water Resources
370 - Oceanography
397 - Marine Sciences, Other*

ENGINEERING

400 - Aerospace, Aeronautical & Astronautical
410 - Agricultural
415 - Bioengineering & Biomedical
420 - Civil
430 - Chemical
435 - Ceramic
436 - Communications
437 - Computer
440 - Electrical
445 - Electronics
450 - Industrial & Manufacturing
455 - Nuclear
460 - Engineering Mechanics
465 - Engineering Physics
470 - Mechanical
475 - Metallurgical & Phys. Met. Engr.
476 - Systems Design & Systems Science (see also 072, 073, 074)
478 - Operations Research (see also 082)
479 - Fuel Technology & Petroleum
480 - Sanitary & Environmental Health
485 - Naval Arch. & Marine Engr.
486 - Mining & Mineral
487 - Ocean
490 - Polymer
497 - Materials Science & Engineering
498 - Engineering, General
499 - Engineering, Other*

AGRICULTURAL SCIENCES

501 - Agricultural Economics
508 - Animal Breeding & Genetics
509 - Animal Nutrition
512 - Animal Sciences, Other*
500 - Agronomy
511 - Plant Path. (see also 553)
513 - Plant Breeding & Genetics
514 - Plant Sciences, Other*
503 - Food Science and/or Technology (see also 573)
505 - Forestry
506 - Horticulture
507 - Soil Sciences
515 - Fisheries Sciences
516 - Wildlife Management
518 - Agriculture, General
519 - Agriculture, Other*

MEDICAL SCIENCES

520 - Medicine & Surgery
522 - Public Health & Epidemiology
523 - Veterinary Medicine
524 - Hospital Administration
526 - Nursing
527 - Parasitology
528 - Environmental Health
530 - Audiology & Speech Pathology
534 - Human and Animal Pathology
536 - Pharmacology
537 - Pharmacy
538 - Medical Sciences, General
539 - Medical Sciences, Other*

BIOLOGICAL SCIENCES

540 - Biochemistry (see also 280)
542 - Biophysics
550 - Botany
551 - Bacteriology
552 - Plant Genetics
553 - Plant Path. (see also 511)
557 - Plant Physiology
563 - Human & Animal Genetics
566 - Human & Animal Physiology
569 - Zoology
544 - Biometrics & Biostatistics (see also 055, 670, 725, 727)
545 - Anatomy
546 - Cell Biology
547 - Embryology
548 - Immunology
549 - Endocrinology
560 - Ecology
571 - Entomology
572 - Molecular Biology
573 - Food Science and/or Technology (see also 503)
574 - Behavior/Ethnology
575 - Microbiology
576 - Nutrition & Dietetics
589 - Neurosciences
590 - Toxicology
598 - Biological Sciences, General
599 - Biological Sciences, Other*

PSYCHOLOGY

600 - Clinical
603 - Cognitive
610 - Counseling & Guidance
620 - Developmental & Gerontological
630 - Educational
635 - School
641 - Experimental
642 - Comparative
643 - Physiological
650 - Industrial/Organizational
660 - Personality
670 - Psychometrics (see also 055, 544, 725, 727)
675 - Quantitative
680 - Social
698 - Psychology, General
699 - Psychology, Other*

SOCIAL SCIENCES

700 - Anthropology
703 - Archeology
708 - Communications
709 - Linguistics
710 - Sociology
720 - Economics (see also 501)
725 - Econometrics (see also 055, 544, 670, 727)
727 - Social Statistics (see also 055, 544, 670, 725)
730 - Demography
740 - Geography
745 - Area Studies*
751 - Political Sci. & Government
752 - Public Administration
753 - Public Policy Studies
755 - International Relations
760 - Criminology & Criminal Justice
770 - Urban & Regional Planning
775 - History & Philosophy of Sci.
798 - Social Sciences, General
799 - Social Sciences, Other*

HUMANITIES

804 - History, American
805 - History, European
808 - History, Other*

811 - American Literature
813 - English Language
814 - English Literature
827 - Classics
831 - Speech & Debate
836 - Comparative Literature
839 - Letters, Other*

821 - German
822 - Russian
823 - French
824 - Spanish & Portuguese
826 - Italian
829 - Other Languages*

802 - Art History & Criticism
806 - American Studies
809 - Theatre & Theatre Criticism
830 - Music
833 - Religious Studies (see also 881)
834 - Philosophy (see also 030)
891 - Library & Archival Sciences
878 - Humanities, General
879 - Humanities, Other*

EDUCATION AND PROFESSIONAL FIELDS

801 - Applied Art
881 - Theology (see also 833)
882 - Business & Management
883 - Home Economics
884 - Journalism
886 - Law, Jurisprudence
887 - Social Work
888 - Architec. & Environ. Design
896 - Professional Fields, General
897 - Professional Fields, Other*
938 - Education (other than teaching in a field listed above)

899 - OTHER FIELDS*

*Identify the specific field in the space on the questionnaire.

LIST OF FEDERAL SUPPORTING AGENCIES (For use with # 22)

1. Agency for International Development
2. Environmental Protection Agency
3. National Aeronautics & Space Administration
4. National Endowment for the Arts
5. National Endowment for the Humanities
6. National Science Foundation
7. Nuclear Regulatory Commission
8. Smithsonian Institution
9. Department of Agriculture
10. Department of Commerce
11. Department of Defense
12. Department of Energy
13. National Institutes of Health (DHHS)
14. Alcohol, Drug Abuse & Mental Health Administration (NIAA, NIDA, NIMH)
15. Other DHHS, specify_____
16. Department of Education (NIE, OE, NCES)
17. Department of Housing and Urban Development
18. Department of the Interior
19. Department of Justice
20. Department of Labor
21. Department of State
22. Department of Transportation
23. Other agency or department, specify_____
24. Don't know source agency

other science resources publications—Con.

	NSF No.	Price
S/E Personnel		
Science and Engineering Doctorates: 1960-86	88-309	____
Immigrant Scientists and Engineers: 1986.	88-308	____
Academic Science/Engineering: Graduate Enrollment and Support, Fall 1986	88-307	____
U.S. Scientists and Engineers: 1986	87-322	____
Characteristics of Recent Science and Engineering Graduates: 1986	87-321	____
Federal Scientists and Engineers: 1986	87-320	____

Reports

R&D Funds		
Federal R&D Funding by Budget Function: Fiscal Years 1986-88	87-305	____
S/E Personnel		
Women and Minorities in Science and Engineering	88-301	____
Foreign Citizens in U.S. Science and Engineering: History, Status, and Outlook	86-305 Revised	____
Composite		
International Science and Technology Data Update	87-319	____
Science and Technology Data Book	87-317	____
Project Summaries: FY 1987	87-315	____
Profiles—Mechanical Engineering: Human Resources and Funding	87-309	____
Profiles—Chemistry: Human Resources and Funding	87-307	____
A Guide to NSF Science/Engineering Resources Data	87-305	____